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# THE COST OF THE NATIONAL HEALTH SERVICE

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In the Beveridge Report, 1942 (Appendix A, p. 201), the cost of a comprehensive health service for Great Britain was estimated by the Government Actuary at roughly £170 million. On a basis of population Scotland's share can be taken at £19 million, leaving £151 million for England and Wales. The National Government White Paper, 1944 (Cmd. 6502, Appendix E, p. 84), gave £132 million for England and Wales. The service contemplated was, however, incomplete, because it left £6 million to be provided for voluntary hospitals out of voluntary contributions and because "it would probably be several years before the net expenditure on the new dental services reached £10 million and on the new ophthalmic services £1 million"—a prediction very soon to be shown false. Allowing £4 million for a contemporary estimate for these two services, we get £142 million for a complete service. The White Paper, however, assumed the existence of 520,000 hospital beds, a figure which the subsequent hospital surveys showed to be an overestimate. The actual figures cannot be stated with precision, since in two out of the ten surveys the number is not stated. Calculating from the remaining eight, we may take the number of non-existent beds as 86,000. The White Paper estimate of £86 million for the total cost of the hospital services would therefore, if accurate, be £71 million, giving for the complete service £127 million.

The National Health Service Bill, 1946 (Financial Memorandum, p. iv), reckoned the cost of a complete service at £152 million. Two years later the Minister of Health, in answer to Sir Ernest Graham-Little (*Hansard*, April 8, 1948), gave an estimate of £230 million at current costs. The corrected estimates for a comprehensive service are therefore as shown in Table I.

TABLE I.—*Estimates for England and Wales; Adjusted for a Comprehensive Service in All Cases*

| Year | Authority | £M |
|---|---|---|
| 1942 | Beveridge Report .. .. .. .. .. .. | 151 |
| 1944 | White Paper .. .. .. .. .. .. .. | 127 |
| 1946 | N.H.S. Bill .. .. .. .. .. .. .. | 152 |
| 1948 | Minister of Health .. .. .. .. .. .. | 230 |

These figures take no account of projected capital expenditure. Health centres (2,000 at £187,000 each) will cost £374 million excluding site values and cost of equipment; the 69,000* extra hospital beds needed according to the Hospital Surveys will cost £345 million. Adding the cost of rebuilding, renovating, and re-equipping existing hospitals, we reach a figure far in excess of £1,000 million. Even though the capital cost be spread over a number of years, the annual charge, including the cost of servicing, will reach an astronomical figure. What a commentary on our vaunted conquest of disease!

Meanwhile our faith in the official estimates, already shaken by their remarkable antenatal rise, is shattered by such neonatal estimates as have come in. The ophthalmic service is reckoned to be costing £20 million and the dental service £28 million, so that these two services alone are costing one-third of the Beveridge estimate and one-fifth of the 1948 estimate for the whole service. Let us therefore examine in retrospect the sequence of thought culminating in the present set-up, paying particular attention to the Beveridge Report, its *fons et origo*. We shall then see that all the official predictions are totally unreliable—(1) because they ignore the effect of the ageing of the population, (2) because they ignore the intrinsically expansile nature of hospital practice, and (3) because they are based on a false conception of health and disease.

It should be borne in mind that, according to the Beveridge Report (p. 162), "the primary interest of the Ministry of Social Security is . . . in finding a health service which will diminish disease by prevention and cure." On p. 104 it foresees that "there will actually be some development of the service and as a consequence of this development a reduction in the number of cases requiring it." These two factors are expected to cancel each other, leaving the cost for Great Britain in 1965 unchanged at £170 million. The author therefore seems to have had little faith in the ability of his scheme to fulfil its purpose. Later opinions were only slightly more realistic. The White Paper (Appendix E, p. 81) foresaw that the 1938–9 cost would be "considerably increased" owing to "some expansion of accommodation and services," higher prices and wages, and payment for specialist services in the voluntary hospitals. The Bill (Financial Memorandum, p. i) expected that "considerable capital expenditure on the provision and expansion of hospital and other accommodation would be necessary as well as a high rate of expenditure and upkeep of existing buildings and renewal of equipment," but put this down to the arrears which had accumulated during the war.

### The Ageing of the Population

One needs no medical training to know that the need for medical attention increases with age. Lord Beveridge evidently realized it, for he emphasizes the necessity of providing for the increasing risks of later life, and assures us (p. 8) that he has taken the ageing of the population into account. Yet in predicting a diminution in the need for treatment he ignores the warning which glaringly confronts him in his own Report. The relevant figures are shown in Table II.

*This figure is, as I shall show, a gross underestimate. Moreover it does not include mental beds.

TABLE II.—*Estimated Population of Great Britain by Age Groups (from the Beveridge Report, p. 91)*

| | 1941* | | 1971 | | Difference | |
|---|---|---|---|---|---|---|
| | No. | % of Total | No. | % of Total | In Nos. | In % of Total |
| Under 15 .. | 9,573,000 | 20·6 | 7,600,000 | 16·5 | −1,973,000 | −4·1 |
| Men 15–64; Women 15–59, both inclusive | 31,421,000 | 67·5 | 28,804,000 | 62·6 | −2,617,000 | −4·9 |
| Men 65 and over; Women 60 and over | 5,571,000 | 12·0 | 9,576,000 | 20·8 | +4,005,000 | +8·8 |
| Total .. | 46,565,000 | | 45,980,000 | | | |

* I go back to 1941 because that year is the nearest to the date of publication of the Beveridge Report and because no provision has been made for the change which have since occurred.

How could anyone fail to see that the addition of 4,000,000 to the pensionable group must result in a considerable increase in the incidence of disease? For the estimation of this increase certain data are available.

1. *Incidence of Degenerative Diseases.*—Holingsworth and Klem (1943) found that in people over 65 in the United States the incidence of degenerative diseases was 86.4 per 1,000. Assuming a similar incidence in this country, the number of sufferers would rise from 483,000 in 1941 to 829,000 in 1971, an increase of 72%.

2. *Domiciliary Attendance.*—In the United States Collins (1940) found that domiciliary attendance on people over 65 and on younger people was in the proportion of 6.0:2.7. The figures for this country given in the Registrar-General's Quarterly Returns are roughly the same. Simple calculation shows that if all medical treatment were domiciliary the amount for the whole population would increase by $\frac{22}{317}$, or 9.5%, from this cause alone.

3. *Bed-provision for the Chronic Sick.*—An investigation carried out by the Surrey County Council on behalf of the hospital surveyors of the London Area showed that of the beds for the chronic sick 75% were occupied by people over 64, and 25% by younger people. The number of beds needed is estimated in the different surveys at between 1.2 and 2.0 per thousand. Taking the lower figure, Table III shows that the increase needed between 1941 and 1971 is 28,000.

TABLE III.—*Beds Required for Chronic Sick (On a Basis of 1.2 per Thousand)*

| Year | Men over 64 and Women over 59 | | | Others | | | Total Beds |
|---|---|---|---|---|---|---|---|
| | No. | % of Popn. | Beds | No. | % of Popn. | Beds | |
| 1941 | 5,571,000 | 12·0 | 42,000 | 40,994,000 | 88·0 | 14,000 | 56,000 |
| 1971 | 9,576,000 | 20·8 | 72,000 | 36,404,000 | 79·1 | 12,000 | 84,000 |

Similarly, taking the higher figure, the increase is 47,520. Whatever the figure, the increase is 50%.

Lord Beveridge seems to have visualized a population after an active life of successive illnesses and restorations to health entering into healthy old age which eventually terminates in clinically blameless death. The hospital surveyors of the Eastern Area hope for a diminution in the incidence of degenerative diseases for improved home care and earlier diagnosis. But it has yet to be proved that home care is more economical than institutional treatment, and we have little evidence that earlier diagnosis will make tissues less liable to degenerate or old bones less liable to break. It is obvious to everyone that to our powerlessness to prevent these occurrences must be added our remarkable progress in retarding malignant and degenerative processes, and that, although this progress must itself in due course become retarded, we have still a long way to go before the limit of our achievements is reached. We shall certainly see a more widespread application of radiotherapy and physiotherapy, which, whether really effective or not, will be valued, and therefore demanded, for the psychological satisfaction which they give not only to the recipients but also to their relatives. The transference, so to speak, in 30 years of 4,000,000 from the younger to the pensionable age group (a number which may well be increased by medical progress) cannot fail to impose a heavy economic strain on a working population diminished by 2,600,000 according to the official estimates, which, it should be noted, take no account of the further reduction that will result from Government-sponsored emigration on a large scale and from the raising of the school-leaving age to 16. We may derive a grim consolation from the easement of the burden owing to the diminution of 1,970,000 in the number of children under 15.

### The Expansion of Hospital Practice

Prior to the last war the medical services undertaken by the State, apart from the activities of the Medical Research Council, were practically confined to the institutional treatment of chronic sickness, infectious and mental diseases, tuberculosis, and to part of general practice. With the exception of the surgical treatment of tuberculosis the cost of these was almost static, fluctuating only with the cost of living. Any undue rise in the cost of the general practitioner service could be checked by penalties for over-prescribing. When the State proposed to undertake the treatment of the acute sick it was assumed that this too was almost static. "There will be *some* development of the service," says the Beveridge Report. "There will be *some* expansion of accommodation and services provided (e.g., for cancer)," says the White Paper [italics mine].

These comforting words betray a singular ignorance of the most outstanding characteristic of the voluntary hospitals—namely, that their activities were determined by the application of science, which, as I have shown (Roberts, 1948), resulted in the expansion with accelerating velocity of every branch of their work without exception. The growing demands made upon them they met by spending up to and often beyond their income, proudly displaying their adverse balances as a measure of their success and as a basis for appeals for more generous support. There was therefore every reason to suppose that when their financial embarrassments were removed their expansion would be still further accelerated. But owing to defective historical sense none of the official publications show any realization of this state of affairs, though it must have been obvious if only from experience gained in the Emergency Medical Service. Estimates were based on the then existing expenditure plus the amount due to arrears which had accumulated during the war. Had they been based on the *rate of growth* they would have furnished a more reliable indication of the magnitude of future commitments.

### Misconceptions about the Nature of Disease

To sociologists disease has always appeared as something which causes poverty. It is one of the five "giants" (to quote the Beveridge Report) which threaten social security through the cost to the invalid and the economic consequences to him and to his dependants. Hence the first steps at mitigation were concentrated, in the National Insurance Act, on the wage-earner. In the Beveridge Report this view of disease receives its fullest expression. This can be seen in the repeated emphasis on "restoration to health" and the importance of rehabilitation. Steps must be taken "to prevent interruption or destruction of earning power from leading to want." According to the International Labour Office the principal object of sickness insurance is to restore health and working capacity. Of this simple view the community can be divided into two

groups: those who are well and able to work, and those who are unwell and unable to work. Disease is something people recover from, and the doctor's duty is to expedite that recovery so that they may resume their labours.

For taking this restricted view sociologists cannot be blamed. Untrained in biology and medicine, they are incapable of seeing health and disease in their proper setting. The fault lies in ourselves. In what is known as Social Medicine we have joined hands with them in investigating the effect of social conditions upon health, but we have neglected the wider problem. We have failed to formulate any doctrine embodying the true relation between medicine and all the elements of which civilization is composed—human nature, social progress, standard of living, and control over Nature. This extremely intricate relation we must now make an effort to unravel, a task we can best perform by taking one by one the delusions under which the sociologists labour.

### What is Health?

The Beveridge Report, as we have seen, conceives ill-health as something which threatens social security. But when it comes to the means of treating ill-health it discards this restricted conception for one which is all-embracing. "For every citizen there must be available whatever medical treatment he requires, in whatever form he requires it, domiciliary or institutional, general, specialist, or consultant. . . ." We thus have in the same report two widely differing conceptions, and it is in the gulf which separates them that the Health Service is most likely to founder. It therefore seems desirable to try to define health. The anonymous writers of the *Report on the British Health Services* in the Political and Economic Planning (P E P) Series (1937, p. 395) state that "we can hardly claim scientifically to know what health is." Their self-confessed incapacity, however, does not deter them from expounding, in common with many other writers, the popular fiction of "positive health." This seems to be a permanently ecstatic state which will inevitably ensue from the removal of adverse social conditions, from more intensive health propaganda, the training of more and better doctors, and the building of bigger and brighter hospitals. Maintaining that health can be regarded only as a neutral or zero state, I suggest the following definition:

> Within the limitations of diagnosis good health exists, when the separate organs of the body are functioning within the recognized normal range, and when the integration of their functions permits growth and physical and mental activity within the normal range; (2) when the activity of the micro-organisms for which the body is the natural habitat are efficiently counteracted so that they are prevented from impairing functional powers; and (3) when the physical and mental stimuli constantly arriving from the environment do not appear to impair structure or function at the moment, and, though individually subliminal, do not appear to be exerting a cumulative effect in impairing them in the future.

Whatever its imperfections, this definition is, I think, at least realistic. It recognizes that the fight against disease is one aspect of the struggle for existence, like the quest for food and for protection against the violence of Nature. This struggle, so far from becoming easier, must inevitably become harder at every step owing to our inherent moral and physical infirmities, our mortal nature, and the bounds of time and space. We cannot conquer Nature, for the simple reason that we are ourselves part of Nature; we can only come to terms with her, and she drives a hard bargain.

### Social and Economic Conditions

"It is necessary to remember," says P E P, "that there are often two alternative policies for dealing with ill-health —either to treat the cases or to deal with the social and economic conditions producing the cases." If by "social and economic conditions" is meant poverty I can only reaffirm categorically that with the possible exception of tuberculosis none of the major diseases and few of the minor ailments are in any degree attributable to this cause. Housing conditions are still deplorable in many places, but preventive medicine, by making the slums, as it has made the jungle, more habitable, has made their abolition less insistent. As regards psychological disorders, can we, influenced by the prevailing philosophy of determinism, indefinitely attempt to adjust the environment to the individual, bearing in mind the function of the environment in the formation of character? Does our growing knowledge of the workings of the mind keep pace with the new problems for ever arising in an age when the increasing complexity of civilization inevitably breeds new sources of friction in human relations and when increasing self-consciousness makes man more critical of his environment though not more critical of himself? "The fault, dear Brutus . . ."

Industrial diseases present a similar problem. If our task were confined to the elimination of those which have long existed it would be formidable enough. We must remember, however, that industry is not static. Scientific discovery leads society to engage itself in the production of ever more complex chemical substances the ill-effects of which are discovered only by experience. Even more formidable are the risks involved in the industrial uses of $x$ rays and $\gamma$ radiation, and in the production of isotopes and radioactive substances. The protection of employees and the prevention of contamination of air, water, and earth require a cleansing ritual which is fantastically elaborate. Nor is it merely a matter of disease which is immediately apparent, for there is reason to fear the advent of pathological effects delayed by years and even the possibility of danger to succeeding generations. As man, spurred by curiosity and the struggle to survive, penetrates ever more deeply into Nature's secrets she exacts an ever heavier toll. With these increasing hazards, which become a progressively more integral part of industrial life, medicine strives frantically to keep pace. Danger is always one move ahead of prevention.

### Disease and Working Capacity

"Disease and accidents must be paid for in any case, in lessened power of production and in idleness" (Beveridge Report, p. 158). This sweeping statement is a travesty of the truth. It ignores all those conditions which have no effect on earning power—minor and localized skin diseases, such as digital warts and birth-marks, minor errors of refraction in the illiterate, the loss of a tooth, and baldness (for which wigs are supplied in duplicate), to name only a few of the vast number for which correction is now being demanded. It ignores the fact that medicine is a luxury as well as a necessity. It ignores the coexistence of incurable neurosis with unimpaired functional efficiency. We all know the neurotic woman who, when asked whether her symptoms interfere with the performance of her household duties, replies with an indignant denial, the very suggestion being a reflection both on her sense of duty and on her capacity for martyrdom.

Underlying this view is the assumption that health is something which all desire. I once heard a distinguished sociologist speak of a friend as "enjoying ill-health." From his sympathetic tone it was clear that he was using the expression in its figurative sense and that he was ignorant of its true and literal meaning. This humourless view seems to be general among sociologists. The writers of

PEP say: "Many of the costs of ill-health cannot be measured in money. The subjective element in the endurance of pain and sickness cannot be estimated. It is impossible to say what contribution might in happier circumstances be made to the community by that regrettably large body of persons who 'enjoy indifferent health,' whose energy is all absorbed in struggling through the daily round."

An associated idea is that health is an end in itself. Health, however, is not an end but a means to an end, the end being the full life, though it does not follow that the full life which results is necessarily the good life. Good health is, I imagine, as essential to a burglar as it is to a bishop. But if health is a means to an end there must be an end worth having. At the present stage of civilization the best way to diminish the vast amount of imagined ill-health is the removal of sources of frustration and the encouragement of initiative, independence, and self-respect.

### The Standard of Living

National prosperity, it is believed, is necessarily increased by the advancement of medicine. The truth is that it is both increased and diminished. It is increased by treatment which secures without disproportionate expense complete recovery in the young and middle-aged; it is diminished by measures which promote the survival of the unfit without making them fit and by those which merely prolong invalidism at a level incompatible with functional efficiency. The question is, which of these two actions predominates? I believe it depends upon the stage of development to which medicine and civilization have attained. At lower stages the effect is a pure enrichment of society, but, as civilization advances, the opposite factor exerts an increasing back-lash until at a certain point national prosperity is threatened. I do not say that we have reached this point, but we are certainly moving towards it. We are cured of the simpler and cheaper diseases to fall victim later on to the more complex and more expensive. This is the price which society pays for lengthening the expectation of life.

It is hoped that as the Health Service improves the need for it will diminish, and that this factor should lower the cost (Beveridge Report, p. 104). This is another way of saying that disease still threatens security because treatment is inadequate. Study of the past gives no grounds for this belief. The phenomenal development of hospital practice has, as I have shown (Roberts, 1948), involved an increase in cost per patient far exceeding the rise in the cost of living, a fact which disproves the contention that the increase is due to the more widespread dissemination of existing facilities. The determining factor is the increasing application of science, which, if given free play, will without any doubt always outrun provision. In 1860 England and Wales, with a population of 20,000,000, had just under 11,000 doctors, practically all of whom were general practitioners. Their average income was certainly not more than £500. The total amount spent by patients was thus £5,500,000, including the cost of drugs. To-day the general practitioner service is costing more than £40 million excluding the cost of drugs and administration. In 1860 hospitals, except in large cities, were small and cheaply run, and in country towns almost non-existent. Workhouse infirmaries administered only the barest medical necessities. The country's total medical bill must have been well under £10 million.

It can indeed be laid down as a law, *that in a free economy the cost of medical treatment rises with the standard of living.* This is because medicine is more successful in treatment than in cure; because medicine is partly a luxury and its cost therefore rises with the amount spent on other luxuries, as Dickinson (1947) has shown because those engaged in medicine are themselves part of society and share its fortunes; and because medical progress and a rise in the standard of living are both due to the same cause—the advancement of science. Science which gave us radium and penicillin also gave us television and the electric washer. It follows that in a free economy if the standard of living were to fall the cost of medical treatment would fall with it. In a planned economy there is no knowing what would happen; it would all depend on the planners. Certain it is that if an attempt were made to maintain or increase the cost of medical treatment the fall in the standard of living would be catastrophically accelerated.

Let us here note one very significant fact. Just at the moment when the provision of individual economic security is accomplished comes the realization of the precariousness of our national economic security. This is reflected (among other ways) the change of emphasis in appeals for voluntary support. It being no longer necessary to shock us into generosity with pictures of disease and consequent poverty or of poverty and consequent disease, our feelings are harrowed by statistics showing how disease impedes national recovery. The Empire Rheumatism Council, for instance (*The Times*, Nov. 3, 1948), tells us that 3,000,000 weeks of work are lost each year by the insured population through rheumatic disease. The meaning of this should be clear to all. It is that from the struggle for existence there is no escape. Nature sees to that. Legislation can remove it from the individual but only by transferring it to the State.

### The Moral Implications

"It is a logical corollary to the receipt of high benefits in disability that the individual should recognize the duty to be well and to co-operate in all steps which may lead to diagnosis of disease in early stages when it can be prevented" (Beveridge Report, p. 158). This obligation, which incidentally can be read as a direct encouragement to abuse the Service, means more than refraining from malingering, a subject on which writers on industrial medicine are eloquent. It means that citizens will arm themselves with the moral shield and buckler against disease; that they will conquer the lusts of the flesh; that they will suffer neither their bones to be broken in drunken brawls nor their livers to become cirrhotic by chronic addiction; that they will not use their disabilities to tyrannize over their fellowmen; that they will always allow themselves to be made efficient members of society by surgical operation rather than remain permanent charges on the community by their refusal; and that they will think twice and even three and four times before sending for the doctor. The stability of the Health Service in fact requires a tremendous moral uplift the like of which mankind has never seen, an uplift which even ministerial supplications will be powerless to achieve. Failing this happy transformation of human nature the true logical corollary is the application to our weaker brethren, and perhaps to us all, of measures which, to put it mildly, will be anything but pleasant.

### Medicine Considered as a Commodity

Sociologists maintain that medical treatment is above economic considerations. The Beveridge Report (p. 16) says that full prevention and curative treatment must be available "without an economic barrier at any point." According to Levy (1944), "economy in medical treatment contradicts the very foundation of medical science." This, however, is true only in regard to treatment which results in partial or complete restoration of functional efficiency

application to complaints which do not impair functional efficiency and to diseases which are incurable and which cause total and permanent incapacity is a different matter. This will clarify our minds if we consider the differences and resemblances between medicine and other commodities—food, clothing, housing, and fuel. The chief differences are these: First, the direct cost of medical treatment is an addition to normal requirements. Secondly, allowing for individual variation in the conception of what is essential and what is extravagant, and for the fact that the luxuries of to-day become the necessities of to-morrow, the minimum requirements of other commodities can be at least roughly assessed. We know the amount of clothing, fuel, and food needed to keep us warm, dry, and well nourished. In contrast, the need and value even of the essentials of medicine are usually impossible to assess.

Thirdly, we know the cost of food and clothing; we can find out exactly the cost of repairing a house or a coat and we have a reasonable guarantee that the repair will be successful. In medicine we have no such assurance. The cost cannot be estimated nor can a cure be guaranteed. When an article reaches obsolescence we can decide whether to repair it or buy another; with our bodies we have no option, and the chances that repair will be successful diminish with the years. Fourthly, though fancy articles command fancy prices, the cost of food, fuel, and clothing in normal times subject to little fluctuation, since it depends on the cost of labour and raw materials and is regulated by the law of supply and demand. Medicine, however, contains within itself the means of its own expansion—namely, the expansion of science on which it is based—an expansion beyond the control of market conditions all of which the only certainty is that it will continue indefinitely.

The resemblances, if less obvious, are no less real. Medicine, like other commodities, consists of a core of essentials surrounded by inessentials extending to luxury and extravagance. Illness makes many people less able to pay the cost of treating it, but it also makes them less able to pay for rent, food, and clothing. The means of providing all these commodities, including medicine, comes from the same sources—personal and national wealth.

The consequences of failing to understand these differences and of ignoring the resemblances are plain for all to see. At a time when food and clothing are rationed, when the housing shortage causes immense difficulties, and when the coal shortage constitutes the gravest threat to our standard of living, medical treatment is provided in abundance with no regard to economy. In unemployment pay, old-age pensions, and the death gratuity, where costs can be readily determined, the benefits are based on the minimum needed to keep our bodies in reasonable comfort and in due course to bury them with reasonable decorum. Moreover, for entrants of advancing years there is a minimum period of contribution before full benefits can be obtained, so that many people have to be helped by National Assistance. But in regard to sickness, the cost of which cannot be ascertained with anything approaching accuracy and of which the only certainty is that it will increase with accelerating speed, the State has underwritten an unlimited liability.

## Conclusions

I believe that through ignorance and miscalculation in the preparation the cost of the Health Service has been grossly underestimated, that when in full operation it will be not less than £500 million, and that in future years it will rise to an even higher figure. Whatever the exact figure, I am firmly convinced that at the present rate of expenditure it will involve us in national ruin. The alternative is hardly less comforting. It is that a limit will be set by shortage of personnel and materials. This means (mark it well!) that medicine will be rationed and controlled, and there is no reason for supposing that nationalized medicine possesses any moral superiority rendering it immune from the vices which rationing and control invariably bring in their train.

There have been occasions when nations have been decimated by disease. They have often recovered, but changed in social structure. The Black Death, for instance, by creating a shortage of labour destroyed the feudal system. In the twentieth century civilization is faced with a threat unique in its history, the existence of more ill-health than it can afford, due not to any temporary calamity but paradoxically to the advance of civilization itself. Society has opened a new Pandora's box, releasing new diseases of its own creation and with them innumerable new methods of treating all the diseases which it cannot cure.

The stupendous problem thus created calls for the exercise of the highest intelligence. Our duty as a profession is clear. We must teach our students and the lay public that the fight against disease is part of the struggle for existence; that medicine is not above economic law but strictly subject to it; that the claims of health, so far from being absolute, are relative to national well-being; that the country will get not the finest Health Service in the world but the Health Service which it deserves. We must not allow absorption in the daily round to prevent us from counteracting the hysterical clap-trap of demagogues, the impracticable visions of idealists, or the false premises of academic theorists. We must proclaim the faith that is in us, the faith inspired not by the Blue Books but by the bedside, not by Sidney Webb but by Hippocrates, not by the London School of Economics but by the Island of Cos.

### REFERENCES

Collins, S. D. (1940). *Publ. Hlth Rep., Wash.*, **55**, No. 44.
Dickinson, F. G. (1947). Report No. 60, Bureau of Medical Economic Research, Chicago.
Holingsworth, H., and Klem, M. (1943). Social Security Board, Bureau of Research and Statistics, Memorandum No. 51, p. 176.
Levy, H. (1944). *National Health Insurance*, p. 92. Cambridge University Press.
Roberts, Ff. (1948). *British Medical Journal*, **1**, 485.

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The Poisons Board has made certain recommendations to the Secretary of State for the further amendment of the Poisons List and of the Rules made under Section 23 of the Pharmacy and Poisons Act. He therefore proposes to make Statutory Instruments which will effect the following changes in the law relating to poisons: 6-morpholino-4: 4-diphenylheptane-3-one and its salts will be added to Part I of the Poisons List. Dinitrocresols will be taken out of Part I and added to Part II of the Poisons List. Bis-bis-dimethylaminophosphonous anhydride, diethyl-paranitrophenyl thiophosphate, hexaethyl tetrophosphate and tetraethyl pyrophosphate will be added to Part II of the Poisons List. 6-morpholino-4: 4-diphenylheptane-3-one will be included in the First and Fourth Schedules to the Poisons Rules. Dinitrocresols will be exempt from the restrictions which apply to First and Fourth Schedule poisons when sold in the form of agricultural and horticultural insecticides or fungicides, Such preparations will be excluded from the general exemption from control of all substances containing dinitrocresols and not being preparations for treatment of human ailments; they will be the only preparations containing dinitrocresols and subject to the control of the poisons law which may be sold by listed sellers of poisons. The four phosphorous compounds named will be exempted from control when sold in any form other than agricultural or horticultural insecticides or fungicides. These preparations, and the similar preparations containing dinitrocresols, will be subject only to the restrictions imposed by their being included in Part II of the Poisons List and in the Seventh Schedule to the Poisons Rules. The form of words with which they are to be labelled will draw attention to the danger of using the preparation in an enclosed place and of allowing it to come into contact with the skin. Rule 30 will be extended to include insulin in the list of poisons which may be manufactured under the supervision of a duly qualified medical practitioner.

# PEPTIC ULCER IN GLASGOW

## A HOSPITAL SURVEY

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From an analysis of reports from hospitals in Great Britain Nicol (1941) suggested that there is a geographical variation in the relative frequency of gastric and duodenal ulcer. Doubtless other geographical variations would come to light if sufficient information were available. Unfortunately the majority of hospital reports deal exclusively with in-patients, and if the criteria for admission vary from one hospital to another the omission of out-patients may lead to serious error. So far the only complete survey of hospital patients with peptic ulcer in this country was made in the Greater London area (Avery Jones and Pollak, 1945). We present for comparison the experience of a hospital in the West of Scotland.

### Methods

A survey was made of the out-patients and in-patients with peptic ulcer attending the Western Infirmary, Glasgow, during the two-year period from May 1, 1946, to April 30, 1948. For the purpose of the survey it was necessary to adopt an arbitrary standard of diagnosis. For out-patients the diagnosis was taken as established when an ulcer had been demonstrated radiologically, and for in-patients when ulcer was the final diagnosis made by the clinician in charge. Out-patients were interviewed daily immediately after they had been *x*-rayed; the count of out-patients was complete as compared with the barium meal logbook, but, as was inevitable in a busy department, a few patients escaped interview. The count of in-patients was made by visiting each ward once a week, and virtually all the ulcer patients were interviewed save those who died within a few days of admission. The information obtained was recorded on punch cards to facilitate sorting. Care was taken to avoid counting any patient more than once, and (again to avoid duplication) out-patients subsequently admitted were classed as in-patients. Patients known to have a peptic ulcer but seeking advice for unrelated disease were excluded. Finally, to allow comparisons to be made with previous reports from other hospitals, we have wherever possible appended to our overall figures the data relating separately to out-patients and in-patients. This has proved all the more necessary as out-patients and in-patients differ (as we shall show) in respect of age, sex, site of ulcer, and complications.

### Number and Sex Ratio of Patients

During the two-year period mentioned it was found that 3,258 ulcer patients passed through the hospital, comprising 2,286 out-patients and 972 in-patients. Figures for the total hospital attendances are not available for the exactly corresponding period, but during the two calendar years 1946 and 1947 the number of patients attending the general medical and surgical out-patient departments was 25,333 and the number of in-patients in the general medical and surgical wards was 22,425. Peptic ulcer accounted for a notable proportion of all hospital patients, especially in the out-patient service. To the 2,286 out-patients with ulcer must be added a further 244 out-patients who were subsequently admitted to the wards; peptic ulcer therefore accounted for some 10% of the total out-patients. Among in-patients it accounted for 4.3%.

There were 2,526 males and 732 females—a ratio of 3 males to 1 female. This was considerably lower than the ratio of 4.7 to 1 given by Avery Jones and Pollak (1945); it is a matter for regret that comparable estimates from other hospitals have not been published. A point of interest in our series, to which further reference will be made, was the different sex ratio in out-patients as compared with that of in-patients: in out-patients there were 3.1 males to 1 female, and in in-patients 4.5 to 1.

### Age and Site Distribution

The age distribution of the ulcer patients attending hospital is shown in Fig. 1. The large number of patients

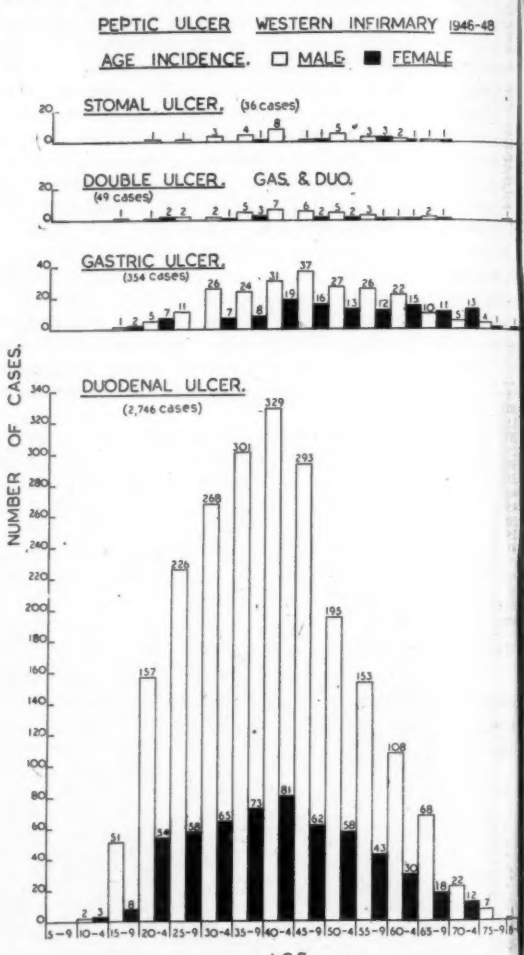


FIG. 1.—Peptic ulcer: Age and sex incidence. In 52 cases the ulcer site was not stated and in 4 cases of gastric and 17 of duodenal ulcer the patient's age was omitted.

(some 60%) concentrated between the ages of 30 and 50 is worthy of notice. This emphasizes again the economic importance of peptic ulcer as a cause of chronic ill-health at a time of life when its victims are at the height of their wage-earning capacity.

The great preponderance of duodenal over gastric ulcer is also well shown in Fig. 1, and the overall ratio was 2 duodenal ulcers to 358 gastric ulcers, or 7.7 to 1. The preponderance was greater in males than in females

males it was 9.5 to 1, whereas in females it was only 4.4 to 1. The ratio differed also in out-patients as compared with in-patients.*

An observation of great interest was the striking difference in the ages of patients with duodenal ulcer as compared with those with gastric ulcer. Thus in males the mean age for duodenal ulcer was 41.8 years and for gastric ulcer it was 47.6. In females the difference was even greater—namely, 42.0 and 51.5 years respectively. These large variations seem to reflect a real age difference in the incidence of duodenal and gastric ulcer. Strong support for this inference is provided by the evidence presented in Fig. 2 and Table I, in which duodenal and gastric ulcers

FIG. 2.—Peptic ulcer: Age at onset of symptoms.

TABLE I.—*Age at Onset of Symptoms*

| Age (Years) | Gastric Ulcer | Duodenal Ulcer |
|---|---|---|
| 5 | 0 | 5 |
| 10 | 2 | 48 |
| 15 | 13 | 226 |
| 20 | 19 | 413 |
| 25 | 38 | 421 |
| 30 | 42 | 391 |
| 35 | 34 | 292 |
| 40 | 42 | 231 |
| 45 | 37 | 169 |
| 50 | 24 | 103 |
| 55 | 23 | 74 |
| 60 | 17 | 55 |
| 65 | 11 | 33 |
| 70 | 4 | 11 |
| 75 | 3 | 4 |
| 80-84 | 0 | 1 |
| Age not stated | 49 | 286 |
| All ages | 358 | 2,763 |

are contrasted in respect of the age at onset of symptoms. It will be seen that symptoms begin at an earlier age in duodenal ulcer than in gastric ulcer.

## Complications of Peptic Ulcer

Of the total 3,258 patients dealt with during the survey, 1,237 (38%) were undergoing treatment for a complication of peptic ulcer or had suffered a complication at some time in the past. Of the common complications we have classified perforation and haemorrhage, but have not felt justified in attempting to classify stenosis. Patients requiring operation for advanced stenosis have been classed with patients requiring operation for other intractable disability under the general term "elective operation." The incidence of complications (past or present) is shown in Table II.

It will be noted that the complication rate was much higher among in-patients than among out-patients. It is indeed hardly a matter for surprise that in-patients should

*The actual D.U./G.U. ratios were in males 1,559/137 for out-patients as against 638/94 for in-patients; and in females 454/86 for out-patients as against 112/41 for in-patients. Excluded from the calculation of duodenal-ulcer/gastric-ulcer ratios were 36 patients with stomal ulcer, 49 with combined gastric and duodenal ulcer, and 52 in whom the site was not stated.

TABLE II.—*Incidence of Complications*

| | Out-patients | | In-patients | | Total |
|---|---|---|---|---|---|
| | Male | Female | Male | Female | |
| Uncomplicated | 1,208 | 414 | 159 | 42 | 1,823 |
| Perforation | 115 | 3 | 225 | 17 | 360 |
| Haemorrhage | 170 | 71 | 145 | 56 | 442 |
| "Elective operation" | 33 | 14 | 85 | 30 | 162 |
| Perf. and haem. | 25 | 1 | 36 | 5 | 67 |
| Perf. and elect. op. | 7 | — | 53 | 1 | 61 |
| Haem. and elect. op. | 14 | 5 | 63 | 20 | 102 |
| Perf. and haem. and elect. op. | 9 | — | 29 | 5 | 43 |
| Unstated | 149 | 48 | 1 | — | 198 |
| Totals | 1,730 | 556 | 796 | 176 | 3,258 |

comprise chiefly those who have suffered some complication of their ulcers. However, when it is shown that only one out of five of the out-patients suffered a complication as against four out of five of the in-patients, it becomes clear that out-patients and in-patients represent different sections of the ulcer community. We believe that it is because in-patients are selected mainly on the basis of past or present complications that they differ from out-patients in so many respects; the outstanding differences in age, sex, and site of ulcer have been stressed throughout this report.

The commonest complications were perforation and haemorrhage; the relative frequency of these is shown in Table III. In gastric ulcer haemorrhage was commoner

TABLE III.—*Relative Frequency of Perforation and Haemorrhage*

| | Perforation | | Haemorrhage | |
|---|---|---|---|---|
| Gastric ulcer | 28 males | 9 females | 51 males | 30 females |
| Duodenal ulcer | 456 ,, | 23 ,, | 294 ,, | 114 ,, |

than perforation in both sexes. In duodenal ulcer, however, there was a conspicuous sex difference: in males perforation exceeded haemorrhage in the ratio of 456 to 294, or 1.5 to 1, whereas in females perforation fell short of haemorrhage in the ratio of 23 to 114, or 1 to 5. This remarkable sex difference in duodenal ulcer remains unexplained. If it be accepted that duodenal ulcers which perforate are situated anteriorly, whereas those which bleed are mainly posterior, it would seem that women must have a relative immunity from ulcer of the anterior duodenal wall. This interesting speculation merits further investigation.

## Site of Ulcer and Social Status

It has been claimed (Morris and Titmuss, 1944) that among the poorer classes there is a disproportionately large number of deaths due to gastric ulcer as compared with duodenal ulcer. It was of interest, therefore, to arrange our patients according to social status and site of ulcer, but it can be said at once that we were unable to confirm this finding. For the social grading we have used the scheme of the Registrar-General for England and Wales (1931); Grade I includes the professions, Grade III skilled artisans, Grade V unskilled workers, and Grades II and IV are intermediate.

Table IV shows that the observed and expected numbers were in general in close agreement. There was no systematic surplus of gastric ulcers in Grade V, and indeed in two of the three age groups there was actually a small deficit.

Lastly, we examined the possibility that peptic ulcer in women might be commoner in the unmarried because they tend to have the same conditions of work and meal-times as men. Among 584 women between the ages of 20 and 64 the unmarried amounted to 150 (26%). This seemed to us to be a high proportion, and we were surprised to discover

TABLE IV.—*Social Grade of Male Patients Aged 20–64*

| Age | Site | Social Grade | | | |
|---|---|---|---|---|---|
| | | I and II | III | IV | V |
| 20–34 | Gastric | 2 (2·9) | 20 (26·0) | 7 (5·8) | 11 (5·3) |
| | Duodenal | 46 | 416 | 90 | 78 |
| 35–49 | Gastric | 3 (6·2) | 62 (58·8) | 13 (11·9) | 11 (12·1) |
| | Duodenal | 65 | 589 | 119 | 123 |
| 50–64 | Gastric | 6 (6·5) | 40 (42·8) | 15 (9·8) | 8 (9·9) |
| | Duodenal | 40 | 266 | 55 | 63 |

From the table are excluded 80 duodenal ulcer and 11 gastric ulcer patients whose social grade was not stated. The figures in brackets give the number of gastric ulcers expected at each age if site and social grade were independent.

that it agreed fairly closely with the proportion of unmarried women in the general population; for women aged 20–64 the 1931 Census for England and Wales gives the proportion of unmarried as 3,747,699 to 11,743,965, or 32%.

### Relative Incidence of Duodenal and Gastric Ulcer in Great Britain

Nicol (1941) stated that the relative incidence of duodenal and gastric ulcers varied throughout Great Britain, and ranged from 8 to 1 in Scotland to 1 to 1 in London. He doubted whether the London figures were truly representative of the ulcer population in that area, and suggested that it was the practice in London to treat more cases of duodenal ulcer as out-patients than was usual in other cities, so producing an artificial difference in the ratio of duodenal to gastric ulcers. This was confirmed by Avery Jones and Pollak (1945), who by including out-patients found that in London duodenal ulcer was two and a half times as common as gastric ulcer. Nevertheless there is still a gross discrepancy with our finding in the West of Scotland that duodenal ulcer is about eight times as common as gastric ulcer.

Figures are not available giving the relative incidence of duodenal and gastric ulcers in the general population, but during the war many reports were made on peptic ulcer in the Services, and in these the D.U./G.U. ratio varied from 4.0 to 1 (Rook, 1943) to 8.7 to 1 (Morris, 1940). By taking only males under 45 years, and so making their series comparable with the Service patients, Avery Jones and Pollak made the ratio of duodenal to gastric ulcer 5.5 to 1. It would therefore appear that their experience with this age group may be taken as representative. However, when the same group of patients is considered in our series the D.U./G.U. ratio becomes 13.2 to 1. Consequently it must be concluded that the relative preponderance of duodenal ulcer over gastric ulcer is much greater in hospital practice in Scotland than in London. Whether this difference is due to an absolute increase in duodenal ulcer or a deficiency of gastric ulcers remains to be established.

### Summary

A two-year survey of the peptic ulcer patients attending a Glasgow hospital is reported. The survey included both in-patients and out-patients. The chief findings were:

1. The overall sex ratio was 3.5 males to 1 female.

2. The overall site ratio was 7.7 duodenal ulcers to 1 gastric (9.5 to 1 for males and 4.4 to 1 for females). There was no evidence that the ratio of duodenal to gastric ulcer was influenced in males by social status or in females by marital status.

3. Patients with duodenal ulcer were notably younger than patients with gastric ulcer, and the age at onset of symptoms was also lower in duodenal ulcer.

4. The complications of ulcer which the patients had suffered were recorded. Attention is drawn to the relative rarity of perforation in duodenal ulcer in women.

5. In-patients differed from out-patients in respect of sex, age, site of ulcer, and complications. This is attributed to the fact that in-patients were a selected group comprising ch patients who had suffered one or more complications.

6. The ratio of duodenal to gastric ulcer appears to be n higher in Scotland than in London. This finding is discusse

We wish to express our gratitude to Professor Illingworth, proposed this survey, to the physicians, surgeons, and radiolo of the Western Infirmary for their ready co-operation, and to S. G. Murray, Miss C. M. Atkinson, and Miss M. K. Chis for much secretarial help, loyally and efficiently given.

#### REFERENCES

Jones, F. A., and Pollak, H. (1945). *British Medical Journal* 797.
Morris, H. (1940). Ibid., **2**, 235.
Morris, J. N., and Titmuss, R. M. (1944). *Lancet*, **2**, 841.
Nicol, B. M. (1941). *British Medical Journal*, **2**, 780.
Rook, A. F. (1943). *Lancet*, **1**, 733.

## THE DIET, HAEMOGLOBIN VALUES, AND BLOOD PRESSURES OF OLYMPIC ATHLETES

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At a recent meeting of the Nutrition Society on th nutrition of athletes it was made clear that there we but few scientific data relating to the nutrition an physiology of athletes. The gathering of many athle in London for the Olympic Games gave an opportuni for the study of certain aspects of their physiology namely, the food consumption, haemoglobin levels, an blood pressures.

### Food Consumption

Most of the athletes were housed and fed at the R.A camp at Uxbridge, others being accommodated at a numb of smaller centres. Different nationalities occupied differe blocks, a dining-room in each block being reserved for t athletes. Food was prepared in three separate kitchens the main camp. There was also one central cafeteria f snacks and light meals where athletes could entertain th guests. If any athletes were unable to come to camp f a meal they were provided with sandwiches; occasiona they had meals in outside restaurants. These vario arrangements made the collection of food records somewh complicated. Many of the athletes were under considerab mental tension before their contests, and it was therefo essential to exercise a good deal of tact in obtaining t food data. A further complication was that national dish were in many cases provided and the nutrient values o these were not available in the customary tables of fo composition.

The method of survey was as follows. On the Mond of each week the athletes chosen for study were int viewed and their co-operation enlisted. The study each athlete lasted from Tuesday (breakfast) until Frid (supper)—that is, for four days. The athletes collect their food on the cafeteria system; a dietitian follow and was served with duplicates of the meal. At the e

of each meal the food left by the athletes was collected. The duplicate meals and the left-overs thus obtained were put separately into Kilner jars for eventual chemical analysis. At each meal the athlete told the dietitian what extras had been eaten since the previous meal, replicas of which were then obtained either from the cafeteria or from the teams' supplies. The Kilner jars were kept in cold storage, and at the end of four days were sent to the Laboratory of the Government Chemist for chemical analysis. The collection of the food samples was done by three of us (J.B.B., A.K.C., B.M.N.). In addition, Miss Lowden, of the Ministry of Food, collected four sets of diets by the same method from a smaller centre, the results of which have been included here.

### Chemical Analysis of the Diets

The chemical analyses were made in the Department of the Government Chemist under the direction of one of us (C.G.D.). The mixtures of foods received for analysis consisted of duplicates, as near as could be judged, of the diets of the athletes as served at the camp canteens over a period of (usually) four days, together with the actual "leavings" of meals.

To secure a representative sample each Kilner jar was weighed as received, the contents tipped into a large aluminium container, and the jar weighed empty. Any bone, stones, and similar material of no food value were removed and weighed to obtain the amount of the edible material supplied and of the leavings. These leavings were analysed separately. The whole of the food was then introduced in portions into a large hand-operated mincer to produce a finely ground product. After thorough mixing an aliquot was transferred to a Waring blender to produce a homogenized product for analysis. If the liquid in the mixed food was not sufficient for the blender to operate properly a known weight of water was added to bring the mixture to a suitable consistency.

The determination of moisture, ash, fat, and nitrogen was carried out as described by Bransby *et al.* (1948). The carbohydrate values were obtained "by difference"—that is, the amount remaining after subtraction of the moisture, fat, protein, and ash. The factor 6.25 was used to calculate the protein content from the nitrogen values found by analysis. The factors 4, 9, and 4 were employed to calculate the calorie value of the diets from the respective protein, fat, and carbohydrate contents. The food tables of McCance and Widdowson (1946) and of Chatfield and Adams (1940) were used to calculate the nutrient values of any foods not obtainable for chemical analysis.

### Results of Diet Studies

The results are shown in Table I. The protein intakes ranged from 65 to 231 g. a day, averaging 139 g. daily. Only three athletes had less than 100 g. daily. The high intakes were in the main due to large consumptions of meat, eggs, and milk. The intake of fat ranged from 92 to 223 g. a day, and averaged 137 g. daily. The carbohydrate intakes were from 128 to 572 g. a day, with an average of 390 g. daily. The proportions of glucose, sucrose, and starch eaten varied widely, some athletes taking liberal helpings of sugar in their tea, others taking glucose, while others took but small amounts of sugar and no glucose. The calorie intakes ranged from 2,113 to 4,739 daily, with an average of 3,350 daily. There was no consistent difference in the calorie intakes of different types of athletes—e.g., sprinter or long-distance runner. This aspect was further examined by considering the energy available for the normal everyday activities and athletic exercise, after making allowance for the basal metabolism. Thus for each athlete the requirement for basal metabolism and the allowance for specific dynamic action—namely, 10% of the calories provided by the food—were deducted from the total calorie intakes. The remainder, called for brevity "spare" calories, were compared according to the type of athlete. Again, there was no consistent variation of these "spare" calories with the type of event. The "spare" calories per kg. of body weight were then calculated for each athlete (last column, Table I). The results for four nationalities are set out, according to event, in Table II. The data for the Canadians and Chinese suggest that more "spare" calories per kg. of body weight were required for long-distance than for short-

TABLE I.—*Average Daily Intakes of Nutrients by Olympic Athletes*

| Nationality | Age in Years | Civil Occupation | Height (cm.) | Weight (kg.) | Event | Protein (g.) | Fat (g.) | Carbohydrate (g.) | Calories | Basal Metabolism | "Spare" Calories | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Per Day | Per kg. |
| British | 29 | Policeman | 183 | 79 | 100 m. | 136 | 161 | 413 | 3,645 | 1,915 | 1,366 | 17 |
| Canadian | 23 | Student | 181 | 80 | 100 m. | 137 | 92 | 443 | 3,148 | 1,938 | 895 | 11 |
| Belgian | 18 | " | 177 | 70 | 200 m. | 192 | 125 | 459 | 3,729 | 1,905 | 1,451 | 21 |
| Mexican | 23 | " | 168 | 57 | 200 m. | 95 | 112 | 267 | 2,456 | 1,614 | 596 | 10 |
| British | 28 | Clerk | 190 | 75 | 400 m. | 180 | 209 | 524 | 4,697 | 1,924 | 2,303 | 31 |
| Jamaican | — | Student | 186 | 72 | 200 m., 400 m. | 124 | 109 | 490 | 3,437 | 1,866 | 1,227 | 17 |
| Chinese | 23 | In bank | 172 | 59 | 400 m. | 99 | 105 | 338 | 2,693 | 1,653 | 771 | 13 |
| " | 25 | Clerk | 174 | 61 | 400 m. | 103 | 111 | 299 | 2,607 | 1,663 | 683 | 11 |
| British | 30 | " | 176 | 69 | 800 m. | 158 | 200 | 481 | 4,356 | 1,748 | 2,172 | 31 |
| Jamaican | — | Student | 196 | 84 | 400 m., 800 m. | 136 | 116 | 572 | 3,876 | 2,069 | 1,419 | 17 |
| Belgian | 25 | Clerk | 175 | 69 | 800 m., 1,500 m. | 187 | 110 | 439 | 3,494 | 1,770 | 1,375 | 20 |
| British | 27 | Regular Army soldier | 181 | 64 | 800 m., 1,500 m. | 129 | 185 | 369 | 3,657 | 1,741 | 1,550 | 24 |
| Canadian | 22 | Salesman | 182 | 65 | 800 m., 1,500 m. | 136 | 115 | 418 | 3,251 | 1,791 | 1,135 | 17 |
| " | 20 | Student | 190 | 88 | 800 m., 1,500 m. | 143 | 153 | 531 | 4,073 | 2,106 | 1,560 | 18 |
| Belgian | 25 | Clerk | 169 | 63 | 3,000 m., 10,000 m. | 169 | 104 | 322 | 2,900 | 1,663 | 947 | 15 |
| British | 41 | In food factory | 165 | 67 | Marathon | 231 | 164 | 367 | 3,868 | 1,590 | 1,891 | 28 |
| Canadian | 32 | In aircraft factory | 169 | 62 | " | 139 | 149 | 400 | 3,497 | 1,623 | 1,524 | 25 |
| Chinese | — | — | 173 | 59 | " | 146 | 126 | 326 | 3,022 | 1,604 | 1,116 | 19 |
| " | — | — | 167 | 55 | " | 118 | 108 | 351 | 2,848 | 1,574 | 989 | 18 |
| Luxemburger | 18 | Student | 181 | 78 | 120 miles cycle | 172 | 223 | 511 | 4,739 | 2,039 | 2,226 | 29 |
| " | 22 | — | 168 | 67 | 120 miles cycle | 137 | 146 | 411 | 3,506 | 1,732 | 1,423 | 21 |
| Nigerian | 25 | Student | 187 | 76 | Jumping | 114 | 114 | 310 | 2,722 | 1,924 | 528 | 7 |
| Luxemburger | 28 | — | 178 | 75 | Gymnast | 169 | 172 | 413 | 3,876 | 1,857 | 1,631 | 22 |
| " | 25 | Printer | 165 | 53 | " | 128 | 158 | 214 | 2,790 | 1,528 | 983 | 19 |
| Mexican | 26 | Lawyer | 170 | 72 | Wrestler | 117 | 128 | 429 | 3,336 | 1,760 | 1,242 | 17 |
| " | 26 | Student | 180 | 82 | Basket ball | 134 | 104 | 397 | 3,060 | 1,934 | 820 | 10 |
| " | 31 | Business man | 175 | 96 | Hammer-throwing | 65 | 149 | 128 | 2,113 | 2,005 | 103 | — |
| Chinese | 17 | Student | — | — | Swimmer | 101 | 93 | 309 | 2,477 | — | — | — |

TABLE II.—*"Spare"* Calories per kg. of Body Weight per Day*

| Event | 100 M. | 200 M. | 400 M. | 800 M. | 1,500 M. | 10,000 M. | Marathon | 120 Miles Cycle |
|---|---|---|---|---|---|---|---|---|
| British | 17 | | 31 | 31 | 24 | | 28 | |
| Canadian | 11 | | | | 17, 18 | | 25 | |
| Chinese | | | 11, 13 | | | | 18, 19, | |
| Belgian and Luxemburger | | 21 | | | 20 | 15 | | 21, 29 |

* Total calories less the sum of the basal metabolism and specific dynamic action.

distance events, but this was not substantiated by the data for the Belgians, British, and Luxemburgers.

*Ascorbic Acid.*—Estimations of the ascorbic acid intakes were made for seven athletes. Duplicate portions of all foods containing ascorbic acid were collected from the kitchens and were analysed by Dr. C. W. Herd. The intakes (mg.) per day were: British, 71, 80; Luxemburger, 45; Belgian, 81; Canadian, 41; Chinese, 43; Jamaican, 98. Orange juice contributed largely to the last value.

## Food Habits

Twenty athletes were interviewed concerning their normal food habits and their food habits during training and on the day of the race or event. Most of them stated that they were always in training and that consequently their diet underwent little change when they were getting ready for a race. The majority stressed the value of generous helpings of meat, eggs, and milk. Thus one marathon runner normally has two or three eggs and 1–1½ lb. (453–680 g.) of steak daily, and a sprinter two eggs and 1 lb. of steak daily. There were, however, a number of interesting variations as the day of the race approached. Two short-distance runners tend to eat less, a marathon runner to cut down on milk, and a javelin-thrower to cut out afternoon snacks and drink more milk. A middle-distance runner has the same food but larger helpings, and a short-distance runner tries to have more eggs, milk, and meat. Another middle-distance runner has a normal diet throughout training, but on the day preceding the race eats more than usual. The athletes thus did not behave uniformly, but appeared to fall into three groups: those who did not vary their normal habits throughout training, those who tended to eat less, and those who tended to eat more.

On the day of the race food habits often changed considerably. The majority have a normal breakfast, but again there are interesting variations. One short-distance runner has additional eggs and bacon; two others omit breakfast, and another has a broiled steak the night before the race and poached eggs for breakfast. A middle-distance runner and a marathon runner have no breakfast. In practically all cases a lightly cooked meal is eaten three to four hours before the event. Most short- or middle-distance runners have a light snack, the favourite appearing to be poached eggs on toast; but two short-distance runners each have 2 lb. (900 g.) of steak, one additionally having milk, the other chocolate, three-quarters of an hour before the race. Each of the three marathon runners interviewed has a good meal of steak or eggs and bacon about four hours before the race; a 10,000-metre runner has a normal breakfast and nothing within four hours of the race; a wrestler has nothing between 6 o'clock the previous evening and the weigh-in in the morning, but about three hours before the event has a hearty meal of steak, potatoes, and cakes. A javelin-thrower has a normal breakfast and a light snack four hours before the event, and a high-jumper makes no variations at all from his normal diet.

Some athletes specially mentioned sugar, glucose, and salt. Two short-distance runners and a javelin-thrower make a point of taking a lot of sugar in their drinks before the race; a short-distance runner and a marathon runner have glucose every morning; and middle- and long-distance runners have glucose on the day of the race. Three short-distance runners make a point of taking plenty of salt in their food, and two middle-distance runners take salt regularly when in strict training. Two short-distance runners take synthetic vitamin $B_1$ tablets daily, and a jumper takes preparations containing vitamins A, B, C, and D. Most of the athletes avoid taking much fat or fatty foods before the event, as it is considered indigestible.

## Haemoglobin Levels

Blood samples were obtained from 147 men from countries. Their ages ranged from 16 to 47 years, and th competed in a wide variety of events. Blood was tak from the finger, the subject sitting after normal no strenuous activity. The alkaline haematin method w used with a Medical Research Council Grey Wedge phot meter, calibrated against Gibson Harrison standard. Th same person (W.T.C.B.) examined all the bloods. Pipett were tested and corrections made, where necessar beforehand.

The mean haemoglobin level of the 147 men was 16 per 100 ml., with a range of from 13.7 to 18.6 g. an standard deviation of 1.01 g. The mean level for 93 me from temperate countries was identical with that of 54 me from warm or tropical countries—namely, 16 g.

The haemoglobin levels of 35 men competing in event involving a high oxygen debt—short-distance runner swimmers, cyclists, and oarsmen—averaged 15.9 g., which is not significantly different from the grand average. Subdivisions into events demanding great strength, great endurance, and skill rather than endurance gave averages of 15.9 g., 15.7 g., and 16.2 g. respectively. None of the differences between these is significant.

## Blood Pressures

Readings were taken with the subject seated, after normal non-strenuous occupation. An ordinary mercury column-and-cuff sphygmomanometer was used. The diastolic pressure was read at the beginning of the fourth phase. Readings were taken either by one of us (H.S.T.) or in six instances by the doctor to the team.

Values for the whole group, and for men from temperate and warm countries, are shown in Table III. The group from temperate countries had a significantly higher systolic and lower diastolic pressure than the group from warm countries.

TABLE III.—*Blood Pressures of Olympic Athletes According to Climate*

| Group | No. of Subjects | Mean Systolic mm. Hg | S.D. | Range | Mean Diastolic mm. Hg | S.D. | Range |
|---|---|---|---|---|---|---|---|
| Temperate countries | 111 | 121·2 | 13·2 | 100–160 | 76·0 | 8·2 | 60–100 |
| Warm countries .. | 90 | 116·6 | 13·1 | 90–150 | 79·1 | 7·7 | 65–100 |
| Whole .. .. | 201 | 119·1 | 13·1 | 90–154 | 77·4 | 8·1 | 60–100 |

TABLE IV.—*Blood Pressures of Olympic Athletes According to Body Weight*

| Group | No. | Systolic Pressure mm. Hg | Diastolic Pressure mm. Hg |
|---|---|---|---|
| Temperate countries: | | | |
| Less than 140 lb. (63·6 kg.) .. | 11 | 112·8 | 68·1 |
| 140–164 lb. (63·6–74·5 kg.) .. | 52 | 120·1 | 75·6 |
| 165–189 lb. (75·0–85·9 kg.) .. | 33 | 121·2 | 76·8 |
| 190 lb. (86·3 kg.) or more .. | 15 | 130·8 | 81·2 |
| Warm countries: | | | |
| Less than 140 lb. (63·6 kg.) .. | 23 | 114·1 | 77·1 |
| 140–164 lb. (63·6–74·5 kg.) .. | 44 | 116·2 | 79·1 |
| 165–189 lb. (75·0–85·9 kg.) .. | 16 | 117·4 | 80·1 |
| 190 lb. (86·3 kg.) or more .. | 7 | 126·3 | 84·0 |

TABLE V.—*Blood Pressures of Olympic Athletes According to Age*

| Group | No. | Average Age | Systolic Pressure mm. Hg | Diastolic Pressure mm. Hg |
|---|---|---|---|---|
| Temperate countries: | | | | |
| Under 25 years .. | 49 | 21·5 | 120·0 | 75·8 |
| 25–29 years .. | 31 | 26·6 | 124·2 | 74·9 |
| 30 years or more .. | 31 | 33·7 | 119·9 | 77·3 |
| Warm countries: | | | | |
| Under 25 years .. | 37 | 21·7 | 117·0 | 78·2 |
| 25–29 years .. | 29 | 26·6 | 116·2 | 79·0 |
| 30 years or more .. | 24 | 33·4 | 116·6 | 80·8 |

The average systolic and diastolic pressures showed a trend of increase with increasing weight (Table IV). Table V shows mean pressures according to age. While systolic pressure shows no consistent trend, diastolic pressure tends to increase with increasing age. Classification according to type of athletic event did not reveal any significant differences in blood pressures.

## Discussion

*Food.*—From a study of the diets of Olympic athletes in Berlin in 1936 Schenk (1936) reported that the average calorie intake of the competitors was 7,300 a day—that is, an amount vastly in excess of the highest value found in this study. The difference between them was probably due to the difference in the method of survey, the Berlin investigation relating to the foods entering the camps, the present investigation to the foods actually eaten. The average calorie intake of the 28 athletes (3,350) is about the average need of a man engaged on light work, and thus confirms the view put forward by Abrahams at the meeting of the Nutrition Society that the energy requirement of athletes is not as great as is commonly supposed. There is, however, the possibility that the food eaten during the survey period was less than that normally eaten, as the members of some teams may have been unaccustomed to the foods and meals provided. Moreover, the period of survey—namely, four days—was short, though the results are fairly consistent.

There is a good deal of variation in food habits during training, but athletes in general seem to attach importance to liberal amounts of the animal protein foods in their diets. It is not possible, however, to say whether this preference is due to special value being attached to protein *per se* or to the foods themselves which contain animal protein—namely, milk, eggs, and meat. Some athletes take liberal amounts of the easily assimilated carbohydrates—namely, glucose and sucrose—but fat did not seem to be popular, especially near the time of the event, as it is considered to be indigestible. On the day of the race the short- and middle-distance runners mostly favour a snack or light meal a few hours before the race, but the marathon runners prefer a more substantial meal. There were, however, a number of notable exceptions. Vegetables are generally avoided near the race because they cause flatulence.

*Haemoglobin Levels.*—A wide range of mean haemoglobin values has been reported for different groups of healthy men. In 71 studies available to us from many countries 8 average values of 16 g. or over were reported, and 11 of 15 g. or less. The remaining 52 means lay between 15 and 16 g. Differences must have existed between one group and another in respect of food habits, indulgence in tobacco, and in the amount of exercise taken, and these may account for some of the differences found for these variations, which occur even between different groups in the same country. Most of the subjects of the present study lived on a diet which provided an abundance of the factors needed for blood formation; on the other hand they smoked but little, so that the increase in haemoglobin level associated with tobacco-smoking (Wintrobe, 1942) would presumably not occur. The effect, if any, of exercise upon haemoglobin level is not known for certain. Adcock *et al.* (1949) have shown that, in comparable groups of men, those engaged in active occupations had lower average haemoglobin values than sedentary workers, and the Medical Research Council's (1945) survey also gives lower values for the more active occupations. It will be noted, however, that the most active group of all the subjects of the present investigation, the short-distance competitors and oarsmen, had a mean level which was not significantly different from the grand average

The subjects of the present study represent man at his optimum, and it is of interest that the mean of 16 g. was found in men from temperate and warm climates alike. The standard deviation of 1 g. and the wide range which we found show, however, that wide variations from this mean are compatible with physical perfection, for obviously none of our subjects would have represented his country had his performance been physiologically impaired.

*Blood Pressures.*—Treadgold (1933), in reporting on the pressures of healthy R.A.F. personnel, gives systolic means from 122 to 125 mm. in healthy men of the age range in this study, and diastolic means of from 75 to 79 mm. Symonds (1923), in America, gives systolic means of from 123.5 to 126.4 and diastolic means of 79.5 to 83.3. Robinson and Brucer's (1939) life-assurance figures for Americans show an average of 121 mm. systolic and 74 mm. diastolic, but the systolic pressure is between 118 and 119.25 for the ages with which we deal. The mean pressures of the group from temperate countries are therefore within the range of average values reported in health, a point of interest in view of the tension which prevails at the time of a world athletic contest. It may be noted that the bounding pulse, popularly held to be typical of the athlete, was not common.

Published figures (Donnison, 1929; Chamberlain, 1911; Kilborn, 1926) for the mean systolic and diastolic pressures for different peoples living in warm climates differ markedly, some being well above and some well below European means. The group of men in this study are of several races, and the number from any one nation is too small for a comparison with the European means.

Symonds (1923) showed that both systolic and diastolic pressures rose as the weight–height ratio increased. In the present study the subjects were grouped according to weight, and both systolic and diastolic pressures tended to increase with increasing body weight. There is nothing noteworthy about the relation between age and blood pressures shown in this study, especially in view of the fact that subjects with high pressures may tend to drop out or be weeded out of world athletics as they grow older.

## Summary

A study was made of the food consumption, haemoglobin levels, and blood pressures of a number of competitors in the Olympic Games held in London in the summer of 1948.

The average daily intakes of 28 male competitors were 139 g. protein, 137 g. fat, 390 g. carbohydrate, and 3,350 calories. Neither the total calorie intake nor the "spare" calories—that is, the total calories less those required for basal metabolism and specific dynamic action—per kg. of body weight varied consistently with the type of event.

The food habits of the athletes varied considerably during training. The majority stressed the value of generous helpings of meat, eggs, and milk. Some took glucose or vitamin preparations or large helpings of salt. On the day of the race the usual practice among short- and middle-distance runners was to take a light meal, and the marathon runners a more substantial meal, three to four hours before the event.

Haemoglobin values were obtained for 147 men, the average being 16 g. per 100 ml. There was no difference between the average values for men from temperate and tropical countries, or according to the type of event.

Systolic and diastolic blood pressures were taken on 201 men, the average values being 119.1 and 77.4 mm. Hg respectively. Men from temperate countries had a higher average systolic and a lower average diastolic pressure than men from warm or tropical countries. Both diastolic and systolic pressures tended to increase with increasing body weight, and there was a tendency for diastolic pressure to increase with age.

We wish to express our appreciation of the facilities placed at our disposal by Messrs. John Gardner (London), Ltd., the caterers at the Olympic Camp at Uxbridge, and other help received from members of their staff, and particularly Miss Blundell. We are grateful to the doctors and managers of the teams for their co-operation and assistance, and particularly to Dr. A. Istamboul for his help and for the data he provided. The study could not have been made without the good will of the athletes, and we wish to express our thanks to them for their co-operation.

REFERENCES

Adcock, E. W., Brown, J. Kerr, Magee, H. E., and Milligan, E. H. M. (1949). "Haemoglobin Levels in Sedentary and Active Persons." *Brit. J. Nutrit.* (In press).
Bransby, E. R., Daubney, C. G., and King, J. (1948). *Brit. J. Nutrit.*, **2**, 89.
Chamberlain, W. P. (1911). *Philip. J. Sci.*, **6**, 467.
Chatfield, C., and Adams, G. (1940). "Proximate Composition of American Food Materials." U.S. Dept. of Agric. Circ. No. 549. Washington, D.C.
Donnison, C. P. (1929). *Lancet*, **1**, 6.
Kilborn, L. G. (1926). *Chin. med. J.*, **40**, 1.
McCance, R. A., and Widdowson, E. M. (1946). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 235, 2nd ed.
Medical Research Council (1945). *Spec. Rep. Ser.*, No. 252. H.M.S.O., London.
Robinson, S. C., and Brucer, M. (1939). *Arch. intern. Med.*, **64**, 409.
Schenk, P. (1936). *Münch. med. Wschr.*, **83**, 1535.
Symonds, B. (1923). *J. Amer. med. Ass.*, **80**, 232.
Treadgold, H. (1933). *Lancet*, **1**, 733.
Wintrobe, M. M. (1942). *Clinical Haematology*. Kimpton, London.

# SJÖGREN'S DISEASE, WITH DRYNESS OF THE BRONCHIAL MUCOSA AND UNCERTAIN LUNG LESION

BY

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Henrik Sjögren (1933, 1935, 1938, 1943), of Jönköping, by the careful study of cases of kerato-conjunctivitis sicca, has succeeded in establishing the existence of a syndrome, or rather a disease, which in its complete form includes kerato-conjunctivitis sicca, xerostomia, rhinitis sicca, pharyngitis sicca, and laryngitis sicca, but the disease is far more often incomplete. The eye lesion need not be the presenting condition, and patients may first seek medical advice because of enlargement of salivary glands or because of xerostomia.

The chronic inflammatory changes in the parotid glands, usually without suppuration but with recurrent exacerbations, tend to produce permanent enlargement, sclerosis, or atrophy in irregular combination. Analogous changes occur in the other salivary glands and in the oral mucosal glands; and also in the lacrimal glands, though usually without obvious clinical enlargement. It seems certain that many cases have been labelled as Mikulicz's disease or Mikulicz's syndrome. The skin, especially the sweat glands, and the stomach (acid-producing glands) may be involved in some cases. The clinical onset, often more pronounced on one side than the other, is intermittent and insidious. The patients are mostly middle-aged women. Clinical accompaniments may include accelerated blood-sedimentation rate, alterations in the blood count, in the body temperature, and in the blood-sugar curve, and not rarely arthritic symptoms (rheumatoid arthritis).

In regard to the eye condition Sjögren concluded: "The morbid changes appear to find their simplest explanation in the fact that, owing to intense diminution or complete abolition of the lacrimal secretion, the conjunctiva itself is obliged to provide for the entire secretion of fluid. As the result of this a chronic oedema arises, which gradually leads to degeneration and atrophy of the epithelium." One may suggest an analogous explanation for the secondary changes in the oral mucosa when they arise in cases of chronic xerostomia of any nature. According to Sjögren's investigations it seems clear that the dryness of the mouth and eyes is preceded by changes (microscopical) in the salivary and lacrimal glands.

Non-ocular features of the disease (Weber, 1945), in addition to the changes in the salivary glands and mouth, may include dryness in the nose, pharynx, and larynx; secondary dysphagia (Plummer-Vinson syndrome); secondary cough (from dryness of mouth and pharynx); achlorhydria; dryness of skin; dryness and atrophic change in the vagina; almost complete alopecia; accelerated blood-sedimentation rate; hypochromic anaemia; low blood pressure; low blood sugar; low blood calcium; Raynaud-like blueness of hands and feet; telangiectasis on lips and tips of fingers; telangiectatic and pigmentary sclerodermia-like changes in the legs (Sheldon, 1938–9); and delusional mental symptoms and occasional epileptic fits (Sheldon, 1938–9). But some of these features may possibly be regarded as superadded conditions, not directly connected with Sjögren's disease. However, in regard to the curious pigmentary sclerodermia-like dermatosis in Sheldon's case, one of us (Weber, 1945) has heard of another case of Sjögren's disease with similar leg pigmentation.

In the present case the unusual feature is the occurrence of dryness of the bronchial mucosa with some radiological basal pulmonary shadowing of uncertain nature, which may perhaps be interpreted as an infected (granulomatous) atelectasis due to breakdown of the natural defence owing to the dry bronchial mucosa.

## Case Report

The patient is a delicately built woman of medium height aged 34 on Nov. 13, 1948, thin, but apparently not losing weight. Her father died at 57 of heart failure; he suffered from bronchitis. Her mother died at 69 of "sugar diabetes." The parents had eight children, of which the patient is the seventh; all the others are said to be living and healthy. The patient herself has always been thin and delicate-looking, and since the age of 13 has been subject to short Raynaud-like attacks in the fingers—the tips turn white and then blue—relieved by putting the hands into hot water. She had measles at 17 and scarlet fever at 21. While still in the fever hospital after the scarlet fever she developed temporary swellings on both sides of the face, which were considered possibly mumps. About 1940 she noticed a peculiar dryness of the lips and mouth, which she did not get rid of. In January, 1942, painless cherry-sized parotid swellings developed, one on each side, and were diagnosed as Mikulicz's disease. For these she received deep *x*-ray treatment at the Cancer Hospital (six séances) and they disappeared, but not the dryness of the mouth.

Menstruation, which began at 12 years of age, has remained normal. She married in February, 1939, and in December, 1943, a child (boy) was delivered by caesarean section owing to the presence of a uterine fibroid, which was removed at the same time. The boy was normal at birth and has remained healthy. After suckling him for 8½ months she developed two small painless lumps (September, 1944), one on each side, under the lower jaw. With deep *x*-ray treatment (six séances) they disappeared. She received further deep *x*-ray treatment in February, 1946, but for the past eighteen months she has had a small painless swelling in the right sublingual region. About September, 1944, her eyes felt hot, dry, and irritable, and a doctor told her she had conjunctivitis. It cleared up, but has returned on and off ever since.

In April, 1946, she suffered from "dry pleurisy," first on one side and then on the other. For this she was in bed for three weeks only, but never got rid of the dry cough and since then

has never felt quite well. Since then also the eyes have been drier, and in February, 1948, they became much worse and "follicular" conjunctivitis was diagnosed.

In May, 1948, a stiff neck was followed by painful swelling in the knuckles, and pain and stiffness in the wrists, knees, feet, and left shoulder, with some fever. This polyarthritis of the rheumatoid arthritis type, for which she was referred to one of us (P. E.) by Dr. W. Edwards and treated at the Leatherhead Hospital, has now nearly subsided. Her dry cough has become much worse, and when she is talking she has to sip water frequently to relieve the dryness.

### Present Condition

She complains of dryness of eyes, mouth, and throat and irritable dry cough, much worse on talking. Sometimes she has slight difficulty in swallowing. Most of her teeth have been extracted. By palpation with the finger and thumb a painless cherry-sized swelling can be felt below the tongue to the right of the middle line. There is slight symmetrical enlargement of the thyroid gland, but no clinical evidence of thyrotoxicosis.

A blood count (Aug. 14, 1948) showed: haemoglobin, 98%; erythrocytes, 4,980,000; colour index, 0.99; leucocytes, 6,000. Another blood count (Dec. 31) gave: haemoglobin, 103%; erythrocytes, 5,700,000; colour index, 0.9; leucocytes, 7,600 (polymorphs 81%, lymphocytes 18%, monocytes 1%). Urine showed nothing abnormal. Blood pressure was 120/80 mm. Hg. Blood Wassermann reaction was negative. Blood sedimentation rate was not raised on June 28, 1948, when it was 5; but on Sept. 26 it was 22 (normal 4 to 8). Blood calcium was 10.6 mg. per 100 ml., blood phosphorus 3.9 mg. per 100 ml., and blood alkaline phosphatase 9 units. There has been no sputum at present. There was no clinical evidence of disease of the heart, abdomen, or central nervous system. In the lungs there is diminution of air-entry at both bases, breath sounds are tubular in type at the left base, and numerous dry crepitations can be heard at both bases, but are especially marked at the left base.

*X*-ray examination of the chest (July 11, 1947) showed diminished translucency in the left lower lobe, with pleural involvement. On Aug. 16, 1948, there was an area of consolidation in the left lower lobe, with some scattered opacities in the right lower lobe. The heart, mediastinum, and trachea were centrally placed, the left diaphragm was obscured, and the heart was normal in shape, size, and position. A further skiagram on Nov. 30, 1948, showed little appreciable change. Bronchoscopy was negative, except for dryness of bronchial mucosa; no secretion was obtained (Mr. W. P. Cleland, St. Helier Hospital, Carshalton). Electrocardiogram was normal. The hands showed soft-tissue swelling of the proximal interphalangeal joints but no bony changes, nor were there any bony changes in the other joints.

The following additional investigations were carried out at the Hammersmith Hospital. The sputum showed Gram-positive cocci and diphtheroids on direct smear, and *Staphylococcus aureus* on culture. Fractional test meal gave normal secretion of hydrochloric acid. Urinary excretion of 17-ketosteroids and the glucose-tolerance test were normal. Schirmer's lacrimation test showed moistening along 0.5 cm. of the filter paper compared with 3 to 5 cm. in controls. Salivation test, consisting of collection of saliva for three minutes after chewing and swallowing fruit, gave 0.8 ml., whereas control subjects produced 5 to 9 ml. A heating test for sweating gave normal response. A liver biopsy (performed because pulmonary sarcoidosis had been suggested) showed normal histology.

### Treatment

Treatment was directed symptomatically to the dry eyes, dry mouth, and dry bronchial mucosa. So far as the eyes are concerned cod-liver oil drops gave symptomatic relief. Attempts were made to increase the salivary secretion by pilocarpine, mecholine, and physostigmine. These produced no appreciable response as shown by the salivation test. In the hope that the changes at the base of the left lung might be improved an attempt was made to alleviate dryness of the bronchial mucosa by keeping the patient for a fortnight in a steam tent (Hammersmith Hospital). This had no beneficial effect on the respiratory condition and the patient thought that the dampness aggravated the arthritis. Breathing exercises and postural drainage produced no significant result. She was given vitamin A, 150,000 units daily, empirically, as it was thought that this could not possibly do any harm and might conceivably do some good. Closure of the lacrimal ducts by local diathermy was not carried out, since the eye symptoms were not the most troublesome. The patient thinks that inhalation therapy helped her at the Hammersmith Hospital.

### Discussion

This case seems to be one of Sjögren's disease, which, we think, may be regarded as a lymphoid granulomatous condition, affecting especially the salivary and lacrimal glands and giving rise to dryness of the mouth and conjunctivae. The presence of slight rheumatoid arthritis may be regarded as a point in favour of this diagnosis. In the present instance the bronchial mucosa is specially affected, and there are pulmonary lesions of uncertain nature, probably granulomatous. Dryness of the bronchial mucosa seems as yet not to have been noted in Sjögren's disease, though its occurrence might have been expected in some cases.

The main salivary gland swellings have disappeared under deep *x*-ray therapy, but the dryness of the mouth and conjunctivae has increased if anything, and there is a swelling in the right sublingual region. Further treatment of the case, beyond inhalation therapy, is problematic, but we think that the lacrimal ducts should now be closed by diathermy in order to diminish the conjunctival dryness. Mikulicz's disease is a lymphoid granulomatous condition of the salivary and lacrimal glands very susceptible to *x*-ray treatment, and it is a question how far it can be distinguished from Sjögren's disease, to which perhaps it may be an allied condition (variant). The advisability of further deep *x*-ray treatment is a matter for consideration—in regard both to the sublingual nodule and to the lungs.

There is also the question of the lung condition being of sarcoid nature, but the negative liver biopsy makes this unlikely. We need not therefore consider the further question of a possible relationship between Sjögren's disease, Mikulicz's disease, and sarcoidosis. The replacement of glandular tissues in Sjögren's disease and Mikulicz's disease by a kind of lymphoid granulomatous tissue reminds one, it may be noted, of the gradual replacement of thyroid glandular tissue by lymphadenoid tissue in cases of so-called lymphadenoid goitre.

We are greatly indebted to Dr. J. G. Scadding for the investigations carried out at the Hammersmith Hospital. We have to thank Dr. J. N. Cumings and Dr. S. A. Withers for the routine clinical-pathological and the *x*-ray examinations respectively.

### References

Sheldon, J. H. (1938–9). *Proc. R. Soc. Med.*, **32**, 255.
Sjögren, H. (1933). *Acta ophthal.*, Supp. **2**, 1.
—— (1935). Ibid., **13**, 1.
—— (1938). Ibid., **16**, 70.
—— (1943). *A New Conception of Kerato-conjunctivitis Sicca.* translated by J. Bruce Hamilton, Sydney.
Weber, F. Parkes (1945). *Brit. J. Ophthal.*, **29**, 299.

The Ministry of Health states that in many hospitals and clinics the arrangements for the reception and treatment of out-patients in the past have left much to be desired. It suggests that boards and committees should have in mind the elimination of unnecessary out-patient attendances, the reduction of waiting-time to a minimum, and the maximum convenience and comfort of the out-patient. "The institution of an effective appointment system is probably the biggest single contribution that can be made to the convenience and comfort of out-patients." It adds that the resulting saving of space should make possible the replacement of unsightly and uncomfortable forms by cheap but comfortable chairs, and a canteen for out-patients is an amenity which should be provided. Particular attention should be given to the holding of treatment clinics such as physiotherapy and rehabilitation in the evening or at other times outside the normal working hours of patients, so that working time need not be lost by patients unnecessarily.

# ILLNESS IN GENERAL PRACTICE

BY

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We are fortunate in this country in possessing elaborate and reliable information on the causes of mortality, but with the greater emphasis now being placed on the early diagnosis and the prevention of illness more data are required on morbidity.

This need is being partially met by the surveys of sickness carried out by the Social Survey for the Ministry of Health, whose first report appeared in 1946 (Slater, 1946). The information collected by the Social Survey is obtained by non-medical workers, and while it gives valuable information about the general incidence and trends of illness based on broad diagnostic groups it cannot be expected to provide the detailed information about illness in the community which only certification by doctors can yield. Detailed information on the causes of incapacity from sickness amongst the insured population of Scotland was published by the Department of Health for Scotland (1939), and provides a wealth of morbidity data about this population group in the year 1936–7.

The following survey was undertaken to obtain information about the types and relative frequency of illnesses which lead people to consult their general practitioner.

## Scope of the Survey

Eight general practitioners living in Sheffield or its neighbourhood recorded the age, sex, and diagnosis of all the patients, panel and private, who consulted them in the course of one winter week, February 1 to 7, and one summer week, June 28 to July 4, in 1947. They also indicated whether the patient was seen in the surgery or the patient's home and which cases it was necessary to refer to a hospital or local authority clinic.

The total number of consultations was 4,656 (2,816 in the winter week and 1,840 in the summer week). Only seven of the doctors were able to carry out the summer week survey, as the eighth had left the district. Six of the practices were within the boundaries of the city of Sheffield, one was in Rotherham, and one was situated in the neighbouring mining-agricultural town of Clowne.

Of the 4,656 consultations, 3,041 (65.2%) were held in the doctor's surgery, 1,542 (33.2%) in the patient's home, and 73 patients (1.6%) sent relatives to the doctor on their behalf.

The average number of consultations carried out by each doctor was 353 in the winter week and 265 in the summer week. In 2% of the consultations the patient was referred to a hospital out-patient department, in 0.16% to an in-patient department, and in 0.2% to a local authority clinic.

*Age and Sex.*—Table I shows the distribution of the patients by age group and sex. The total numbers of males and females were nearly equal, but in certain age groups one sex predominated. Females exceeded males in the age group 15–29 mainly because of consultations for obstetrical or gynaecological conditions. Males were in excess in the age period 40–69 but not after that age.

TABLE I.—*Percentage of Patients Falling in Each Age Group, Males and Females*

| Years: | 0– | 5– | 15– | 20– | 30– | 40– | 50– | 60– | 70– | 80– | All Ages |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Male .. | 11·6 | 8·0 | 4·5 | 12·6 | 15·7 | 15·0 | 14·0 | 11·3 | 6·0 | 1·7 | 2,301 |
| Female | 9·4 | 6·9 | 6·8 | 18·5 | 15·4 | 13·8 | 10·2 | 9·0 | 6·8 | 3·2 | 2,326 |
| Unstated | | | | | | | | | | | 29 |
| | | | | | | | | | | | 4,656 |

## The Illnesses

Table II shows the main causes of illness found in the two-weeks survey and their relative frequency. The number of diagnoses (4,814) exceeds the number of consultations (4,656) because some patients were suffering from more than one complaint.

TABLE II.—*Incidence of the Different Types of Illness*

| Illness or Group of Illnesses | Winter Week (2,907 Complaints) | | Summer Week (1,907 Complaints) | | Both Weeks (4,814 Complaints) | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Respiratory disease .. .. | 1,201 | 41·3 | 400 | 21·0 | 1,601 | 33·3 |
| Digestive disease .. .. | 193 | 6·6 | 186 | 9·7 | 379 | 7·9 |
| Cardiovascular disease .. .. | 203 | 7·0 | 161 | 8·4 | 364 | 7·6 |
| Mental ill-health .. .. | 174 | 6·0 | 138 | 7·2 | 312 | 6·5 |
| Obstetrics and gynaecology .. | 148 | 5·1 | 128 | 6·7 | 276 | 5·7 |
| Chronic rheumatism .. .. | 169 | 5·8 | 95 | 5·0 | 264 | 5·5 |
| Accidents .. .. .. | 113 | 3·9 | 134 | 7·0 | 247 | 5·1 |
| Acute specific fevers .. .. | 133 | 4·6 | 91 | 4·8 | 224 | 4·7 |
| Skin diseases .. .. .. | 69 | 2·4 | 96 | 5·0 | 165 | 3·4 |
| Abscesses and cellulitis .. | 72 | 2·5 | 68 | 3·6 | 140 | 2·9 |
| Ear, nose, and throat .. .. | 58 | 2·0 | 29 | 1·5 | 87 | 1·8 |
| Anaemia .. .. .. .. | 37 | 1·3 | 42 | 2·2 | 79 | 1·6 |
| Neurological .. .. .. | 28 | 1·0 | 47 | 2·5 | 75 | 1·5 |
| Uro-genital .. .. .. | 33 | 1·1 | 29 | 1·5 | 62 | 1·3 |
| Senility .. .. .. .. | 35 | 1·2 | 21 | 1·1 | 56 | 1·2 |
| Eyes .. .. .. .. | 27 | 0·9 | 24 | 1·3 | 51 | 1·06 |
| Cancer .. .. .. .. | 25 | 0·85 | 21 | 1·1 | 46 | 0·96 |
| Vaccination .. .. .. | — | — | 35 | 1·8 | 35 | 0·73 |
| Miscellaneous and unclassified | 189 | 6·5 | 162 | 8·5 | 351 | 7·3 |

*Respiratory Disease.*—The respiratory group of illnesses was by far the largest, accounting for 41.3% of the diagnoses in the winter week and 21% in the summer week. The frequency of the different varieties of respiratory illness is shown in Table III. In the winter week influenza accounted for 34.6% and bronchitis for 32% of the respiratory illness. It so happened that a minor epidemic of influenza A reached its peak during this week (Stuart-Harris, 1947). In the summer week bronchitis still accounted for 36% of the respiratory illness, while the percentage attributable to influenza had fallen to 2.7%. The fall in the number of influenza cases in the summer week has the effect of making the percentage incidence of the other causes of respiratory illness disproportionately high. There were, however, more cases of disease of the pharynx or tonsils in the summer week. The poliomyelitis epidemic was gaining ground at this time, and it is possible that some of these pharyngeal conditions represented abortive attacks of that disease. Taking the winter and summer weeks together, bronchitis was the commonest complaint for which medical aid was sought from the general practitioners. It accounted for 11% of all the consultations.

TABLE III.—*Analysis of the Respiratory Illnesses*

| | Winter (1,201 Respiratory Illnesses) | | Summer (400 Respiratory Illnesses) | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Influenza .. .. .. | 416 | 34·6 | 11 | 2·7 |
| Bronchitis .. .. .. | 386 | 32·0 | 144 | 36·0 |
| Coryza .. .. .. .. | 113 | 9·4 | 24 | 6·0 |
| Diseases of pharynx and tonsils | 78 | 6·5 | 106 | 26·5 |
| Pneumonia, all forms .. .. | 58 | 4·8 | 22 | 5·5 |
| Asthma .. .. .. .. | 51 | 4·3 | 29 | 7·3 |
| Pulmonary tuberculosis .. | 20 | 1·7 | 13 | 3·25 |
| Emphysema .. .. .. | 4 | 0·3 | 3 | 0·75 |
| Other respiratory diseases .. | 75 | 6·3 | 48 | 12·0 |

*Digestive Diseases.*—These came next in frequency. In this group 68% were cases of dyspepsia of various types, excluding cancer. The other chief complaints in order

were diarrhoea and enteritis, disorders of the colon, hernia, and appendicitis.

*Cardiovascular Disease.*—The cardiovascular group, which was the third largest, was subdivided as follows: essential hypertension and cerebrovascular accidents, 37%; coronary disease, 14%; rheumatic heart disease, 12%; other diseases of the heart, 30%; and other diseases of the blood vessels, 7%. "Other diseases of the heart" included the rather ill-defined condition "myocarditis." Some of these cases should perhaps have been assigned to the coronary disease group.

*Mental Ill-health.*—Cases of mental ill-health consisted of psychoneurosis 93.6%, psychosis 6.1%, and mental deficiency 0.3%.

*Obstetrics and Gynaecology.*—In this group 36% were antenatal consultations, 31% gynaecological complaints, 10% menopausal disturbances, 9.4% post-natal visits, 5.4% abortions, and 5% confinements.

*Chronic Rheumatism.*—Under this heading, which accounted for 5.5% of the diagnoses, were included lumbago, sciatica, fibrositis, rheumatoid arthritis, and osteoarthritis.

*Accidents.*—Of the accidents 18% were fractures, 9% strains, and 4% burns or scalds. The remaining 67% came under the heading "other accidents."

*Acute Specific Fevers.*—Of the 224 cases in this group 82% were measles, 9% chicken-pox, 4% whooping-cough, 3% German measles, 1% scarlet fever, and 0.9% mumps.

## Preventive Medicine

No patients in this series consulted their doctors for a routine health examination or for advice on the preservation of their health. A certain amount of advice was given by the doctors concerned with regard to the prevention of further illnesses, but the only examples of purely preventive work which were recorded were the 99 antenatal consultations and 35 vaccinations. Together, these constituted 2.9% of the total consultations. No consultations came under the heading of forensic medicine.

From this survey it would seem that the most important classes of disease which the general practitioner is called upon to treat are the respiratory, digestive, cardiovascular, and psychological diseases in that order, followed by obstetric and gynaecological conditions, chronic rheumatism, and accidents.

The low incidence of psychological complaints (6.5%) was commented upon by two of the doctors participating in the survey. This may have been due partly to the fact that in the winter week the weather was very severe and may have discouraged a number of psychoneurotics from attending (although the summer figure was very little higher), and partly to the inclusion of some of these cases under other headings, such as "dyspepsia" or "rheumatism."

In amalgamating the diagnoses of a number of doctors the different criteria employed might lead to the grouping together of conditions which are in fact distinct. The frequency with which the different practitioners diagnosed similar conditions is shown in Table IV, and their correspondence suggests that the diagnostic criteria used by the doctors concerned were similar.

TABLE IV.—*Proportion of Each Doctor's Diagnoses Falling in the Seven Main Diagnostic Groups (winter and summer combined)*

| Diagnostic Group | Dr. A % | Dr. B % | Dr. C % | Dr. D % | Dr. E % | Drs. F & G % | Dr. H % | All Doctors % |
|---|---|---|---|---|---|---|---|---|
| Respiratory disease .. | 28·0 | 27·2 | 42·5 | 36·8 | 30·2 | 31·2 | 37·0 | 33·4 |
| Digestive disease .. | 6·7 | 8·9 | 9·6 | 9·0 | 7·3 | 6·8 | 7·6 | 7·9 |
| Cardiovascular disease .. | 12·5 | 11·8 | 3·3 | 5·5 | 5·5 | 9·9 | 5·4 | 7·6 |
| Mental ill-health .. | 5·5 | 3·1 | 8·4 | 8·1 | 6·0 | 7·7 | 2·9 | 6·5 |
| Obstetrics and gynaecology | 7·3 | 5·8 | 3·6 | 6·4 | 2·9 | 7·3 | 6·0 | 5·7 |
| Chronic rheumatism .. | 3·6 | 7·2 | 5·0 | 5·2 | 7·7 | 4·5 | 6·2 | 5·5 |
| Accidents .. .. | 2·6 | 3·9 | 3·3 | 3·6 | 13·5* | 3·4 | 5·0 | 5·1 |
| Total no. diagnoses .. | 494 | 415 | 584 | 895 | 749 | 1,190 | 487 | 4,814 |

* This practice was in a mining district.

## Discussion

It is interesting to compare the pattern of morbidity as revealed in the present survey with a somewhat similar analysis carried out in Sheffield by Calvert Holland in 1843. He records his attempt "to ascertain the nature of the diseases prevailing amongst the working classes" in Sheffield, "from the books of the surgeons at the poor-house." His analysis of the illnesses of a random sample of 200 males whose ages ranged from 20 to 74 years is shown in Table V. No close comparison with the present series is possible, as Holland's cases consisted only of adult males from the "labouring classes." Nevertheless it is interesting to note that the incidence of respiratory disease in his survey, as in the present one, heads the list—"diseases of the air passages" accounting for 30% of his series of cases, compared with 34% in the present series. The high incidence of diarrhoea and dysentery at that time compared with the present was no doubt largely due to the deficient sanitary arrangements which then prevailed. Digestive disease and rheumatism figure high in Holland's survey, as in the present one; on the other hand, cardiovascular disease was relatively unimportant. This may be attributed to the fact that only 29 of his 200 patients were over 50 years of age. He also tells us that the mean duration of life in Sheffield at that time was 24.12 years. At that time the chances of a baby living to a "cardiovascular age" were in fact not great.

TABLE V.—*Dr. Calvert Holland's Analysis of 200 Cases of Sickness in Men Living in Sheffield in 1843*

| Type of Illness | Percentage |
|---|---|
| Diseases of the air passages .. .. .. .. .. | 30·0 |
| Diarrhoea and dysentery .. .. .. .. .. .. | 13·0 |
| Diseases of the digestive apparatus .. .. .. .. | 12·5 |
| Rheumatism .. .. .. .. .. .. .. .. | 12·5 |
| Diseases of the nervous system .. .. .. .. | 9·5 |
| Fever .. .. .. .. .. .. .. .. .. | 5·0 |
| Diseases of the urinary organs .. .. .. .. | 3·5 |
| Diseases of the heart .. .. .. .. .. | 1·5 |
| Diseases of the skin .. .. .. .. .. | 1·5 |
| Debility .. .. .. .. .. .. .. .. | 1·5 |
| Miscellaneous .. .. .. .. .. .. .. | 9·5 |

The pattern of morbidity has changed over the last hundred years, but respiratory disease still dominates the picture. In this group, cases of bronchitis are numerically the most important.

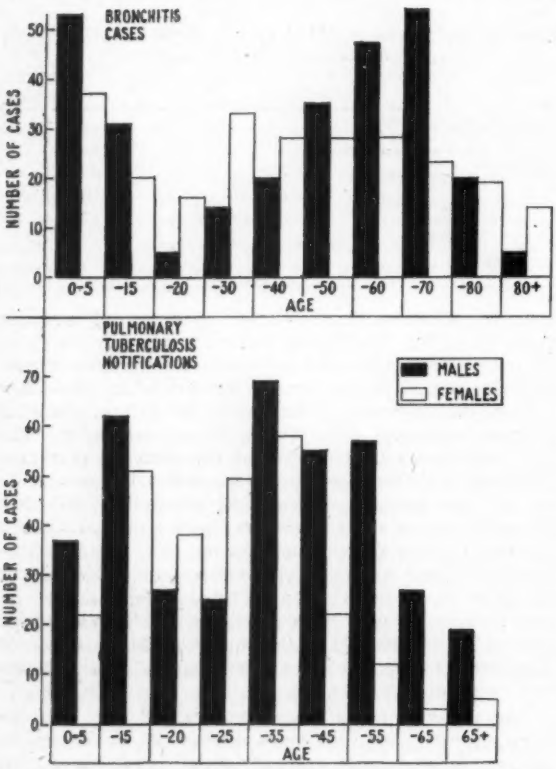
Although the diagnosis of "bronchitis" is not always precise, the condition or group of conditions to which it refers is clearly of great medical and social importance as shown by this and other surveys. Thus in the report on incapacitating sickness in the insured population of Scotland it accounted for 6.57% of the total days of incapacity and was exceeded only by influenza. Gafafer (1944), analysing the causes of sickness absence among 293,960 male industrial workers in the United States, found that bronchitis was responsible for 7.5% of all absences, again being exceeded only by influenza.

The distribution of cases of bronchitis in the present survey by sex and age group is shown in the accompanying Chart, where it is compared with the notifications of pulmonary tuberculosis in Sheffield in 1947 (Roberts, 1947). In adult life the sex-age morbidity pattern of the two diseases is somewhat similar. Females predominate in the first part of working life and males in the later part. Adverse occupational conditions are known to influence the incidence

of tuberculosis. It seems highly probable that occupational factors are also concerned to an important extent in the aetiology of bronchitis.

One of the general practitioners taking part in the present survey wrote: "I feel that the specialized fields of the profession have little conception of the actual work that is done by the general practitioners, and too much attention is paid to fields of medicine which the future general practitioner is rarely if ever called upon to practise."

The present survey does indeed suggest that the student who intends to become a general practitioner may spend a disproportionate amount of time in examining and studying relatively rare diseases. He would benefit from seeing more cases of minor illness than he can hope to find in a teaching hospital and from more opportunities of seeing




Distribution of cases of bronchitis by sex and age group, compared with the notifications of pulmonary tuberculosis in Sheffield in 1947.

disease in its early stages. Some experience in the treatment of the chronic sick and of infirm old people in the home would also be of value to him. Suitably staffed health centres and home visiting from these centres might in the future be used with advantage for the demonstration of such cases to the medical student. In the health centres he could also learn to appreciate the opportunities for practising preventive medicine which occur in general practice.

### Summary

The 4,656 consultations undertaken by eight general practitioners in one winter and one summer week are analysed by sex, age, and diagnosis.

Bronchitis was found to be the commonest condition in summer and in winter for which medical advice was sought, accounting for 11% of all cases.

The relation between the work done in general practice and the training of medical students is briefly considered.

The following general practitioners, by their careful collection of data, made this survey possible: Drs. B. Droller, H. Droller, C. F. Foggitt, M. Jacob, R. B. Knowles, G. E. Tilsley, W. Toms, and E. Zadik. I wish to thank all of them for allowing me to use the records and for their suggestions with regard to the interpretation of the figures. The severe frosts and heavy snowfalls made the work particularly difficult during the winter week. I am indebted to Professor C. H. Stuart-Harris for helpful advice and criticism, and to Miss B. I. Richardson for valuable assistance in the analysis of the data.

#### References

Department of Health for Scotland (1939). Seventh Report on Incapacitating Sickness in the Insured Population of Scotland, July 1, 1936, to June 30, 1937. H.M.S.O., Edinburgh.
Gafafer, W. M. (1944). *Publ. Hlth Rep., Wash.*, **59**, 1267.
Holland, G. Calvert (1843). *The Vital Statistics of Sheffield*. London.
Roberts, L. (1947). Annual Report on the Health of the City of Sheffield.
Slater, P. (1946). "Survey of Sickness, October, 1943–December, 1945." Ministry of Health.
Stuart-Harris, C. H. (1947). *British Medical Journal*, **2**, 994.

## AFEBRILE CASES OF MELIOIDOSIS

BY

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Recovery from infection with *Pfeifferella whitmori* is rare, the death rate being about 95%, and cases of melioidosis with freedom from marked constitutional symptoms are rarer still. The case history of an afebrile patient observed in Malaya in September, 1941, is given below. He had a localized infection with *Pf. whitmori* in a cervical gland, but remained free from general symptoms. He was treated by aspiration of the gland abscess, and when this refilled he was apparently cured by treatment with sulphapyridine. His response to the drug was in keeping with the findings of investigators from 1943 onwards—of which a brief review is given. Reference is made to five other afebrile cases of melioidosis observed in South-East Asia. The *in vitro* effects on *Pf. whitmori* of newer antibiotics such as streptomycin, "polymyxin," and "chloromycetin" are also described and compared with penicillin.

### Case History

A male Indian artisan aged 30 was admitted to hospital in Kuala Lumpur during September, 1941, for treatment of quartan malaria. While in hospital a swelling of one of the cervical glands was noted. This was painful and tender, but was relieved somewhat by glycerin and ichthyol dressings. After receiving quinine treatment for his malaria he had no fever on the fifth, sixth, and seventh days and was discharged at his own request. He returned to work, but one month later was readmitted to hospital because of further pain and swelling in the cervical gland, which by this time was fluctuating in the centre. He had no fever on readmission or during his six-week stay in hospital. The swelling was aspirated on the second day after readmission and thick mucoid pus was withdrawn. On culture the pus yielded a pure growth of *Pf. whitmori*.

A guinea-pig which was injected with 0.03 ml. of a peptone-water culture of the patient's organism died within sixty hours, the animal's skin showing intense oedema, with commencing haemorrhagic necrosis at the site of inoculation. When recovered from the pericardial fluid of the dead guinea-pig and cultured on glycerin agar the organism showed some intensification of its original rugose growth. This type of growth has been shown by Nicholls (1934) to be associated with the more virulent variant of *Pf. whitmori*—in distinction to the mucoid type.

Other cultural characteristics of the patient's bacillus agreed entirely with those described by Stanton and Fletcher (1932). The patient's serum agglutinated his own strain of *Pf. whitmori* to a titre of 1 in 680. A known *Pf. whitmori* serum agglutinated the patient's strain of *Pf. whitmori* to a titre of 1 in 880. He continued to remain constitutionally well and had no fever. The leucocyte picture also remained within normal limits. His cervical gland was reaspirated eleven days after admission and *Pf. whitmori* was again isolated. This re-isolated organism was fully investigated and guinea-pigs were again inoculated; all the bacteriological findings coincided with the first aspiration. These findings, together with the rapid death of the guinea-pigs—the males showing the "Straus reaction"—left little doubt concerning the virulence of the strain of *Pf. whitmori* which was infecting the patient.

The abscess in the cervical gland remained with the skin unbroken, but it tended to refill after aspiration and to show central softening. About four weeks after readmission the abscess seemed about to burst through the skin. A third aspiration was considered, but it was decided to try a course of sulphapyridine instead. Over a period of six days the number of 0.5-g. tablets given daily by mouth was 6, 4, 0, 4, 4, and 6, treatment being interrupted on the third day because the patient, who was feeling quite well, absented himself to attend to some private affairs.

Two days after the course of sulphapyridine treatment had been completed the swelling in the gland subsided. Attempts to reaspirate resulted in the withdrawal of a little blood-stained fluid which on culture did not show the presence of *Pf. whitmori*. A few days later the patient left the hospital.

He was lost sight of during the years following the Japanese occupation of Malaya, but in May, 1948, he was traced and interviewed. He stated that he had remained constitutionally well, and on examination no evidence of ill-health was found. The former swelling in the cervical gland had disappeared completely and there were no external signs. The only remnant of the former *Pf. whitmori* infection was some slight palpable thickening in the periglandular tissues, probably due to adhesions.

### Notes on Similar Cases

The absence of constitutional symptoms in the above case was a remarkable feature. Stanton and Fletcher (1932) cite 83 recorded cases of human infection with *Pf. whitmori* and state that "melioidosis is a very deadly disease and, of known cases, only two have recovered." Full details of these two recovered cases are then given. One is described as being "desperately ill with fever, cough, and chest pains," and the second case is recorded as having "high swinging temperature and bronchopneumonia. . . . For several weeks he lay in a drowsy typhoid condition." In their first case the fever lasted for three months and in the second case for four months.

Cases of melioidosis without marked constitutional symptoms have been recorded. Peck and Zwanenburg (1947) reported the case of an Indian havildar who developed a midline abscess of the neck above the suprasternal notch from which *Pf. whitmori* was obtained in pure culture. The patient had no constitutional symptoms, fever, or glandular enlargement. His serum agglutinated the organism to a titre of 1 in 80. The leucocyte count, both total and differential, showed no unusual features. Hasle and Nguyen-Duc-Khoi (1937) described the case of a Chinese with a suppurative adenitis of the neck from which *Pf. whitmori* was cultured. The patient had no general symptoms or fever. Recovery followed the formation of a fistula.

Other cases of melioidosis remarkable for the absence of constitutional symptoms have occurred in Java, but the infection has been confined to superficial skin lesions. De Moor, Soekarnen, and van der Walle (1932) investigated the chronic skin lesion of the buttock and thigh of an elderly Javanese. This had been present for about eighteen months and was painless. The skin was thickened and was beset with nodules containing pus from which *Pf. whitmori* was repeatedly isolated. Their illustrations show the absence of ulceration. The blood picture was normal and there was no fever. The patient's serum agglutinated his strain of *Pf. whitmori* to a titre of 1 in 600.

Again, Sudibyo (1938) described superficial serpiginous ulcers occurring in two elderly Javanese. His illustrations show healed scarred centres of the ulcers bordered by raised nodular spreading edges. Sudibyo was able to isolate *Pf. whitmori* in practically pure culture from all over the lesions, and found that serum agglutination tests against the patients' organisms were positive at titres of 1 in 400 and 1 in 800. His two patients had no loss of appetite, no emaciation, and no fever.

### Treatment of Melioidosis with Sulphonamides

The majority of the cases of melioidosis occurring in South-East Asia have been investigated during the two decades preceding the Japanese occupation from 1941 to 1945, but sulphonamide compounds were available only towards the end of the second decade. Again, melioidosis is seldom diagnosed at the bedside; more often diagnosis is made in the laboratory or post-mortem room, although Stanton and Fletcher (1932) estimate that 200 cases occur each year in Malaya. Thus the factors cited above would account for the scarcity of literature on cases and their treatment with sulphonamides.

Records of treatment of melioidosis with sulphonamides begin with those of Grant and Barwell (1943) and of Mayer and Finlayson (1944), and sulphadiazine treatment is suggested by *in vitro* tests carried out by Mirick and colleagues (1946); but the clinical response to sulphonamides is more extensively investigated in an admirable paper by Harries and co-workers (1948), who conclude that the most effective treatment for the disease is 2 g. of sulphamezathine four-hourly together with local penicillin treatment, where this is possible, combined with autogenous vaccine therapy.

These findings and our case of the Indian artisan described above, who responded in 1941 to sulphapyridine treatment by reduction of his abscess and disappearance of *Pf. whitmori* from the pus, prompted us to investigate further the *in vitro* effects of the sulphonamide compounds on strains of *Pf. whitmori*, but unfortunately all our Malayan strains were lost during the Japanese occupation. Also, this investigation had to be postponed until recently, and the only strain of *Pf. whitmori* available was one isolated by Major Harries in Burma and received by courtesy of the Bland-Sutton Institute for Pathology through Dr. F. R. Selbie and Dr. R. Lewthwaite. The response of this strain to *in vitro* tests against various sulphonamide compounds is shown in the accompanying table. Fleming's "gutter technique" as described by Mackie and McCartney (1946) was used.

| Drug 1 in 5,000 | Inhibition Zone in mm. Occurring with Dilutions of the Bacterial Inoculum | | |
|---|---|---|---|
| | 1 in 10 | 1 in 100 | 1 in 500 |
| Sulphanilamide .. | Nil | Nil | Nil |
| Sulphapyridine .. | ,, | ,, | 2 |
| Sulphathiazole .. | ,, | 11 | 18 |
| Solufhiazole .. .. | ,, | Nil | 12 |
| Sulphamezathine .. | ,, | ,, | Nil |
| Sulphadiazine .. .. | 10 | 12 | 17 |

Allowing for possible differences in the diffusibility of the drugs within the agar medium, these *in vitro* results suggest the further clinical use of sulphathiazole or the somewhat less toxic sulphadiazine in cases of melioidosis. (Mirick *et al.* (1946), when using 15 μg. per ml. of sulphadiazine,

observed complete inhibition of growth in *Pf. whitmori* broth cultures.)

### Effect of Antibiotics on Pf. Whitmori

Harries *et al.* (1948), in addition to using suphamezathine for melioidosis, treated a lung cavity locally by direct injection of 6 ml. of saline containing 300,000 units of penicillin (i.e., 50,000 units per ml.), having found previously by *in vitro* experiments that at least 650 units of penicillin per ml. were necessary to inhibit the growth of *Pf. whitmori.* Miller and co-workers (1948) state that penicillin at concentrations of 1,000 units per ml. has no immediate effect on *Pf. whitmori,* and they use penicillin in such concentrations for three hours at 37° C. to get rid of unwanted organisms when culturing material for isolation of *Pf. whitmori.*

The use of penicillin in melioidosis is thus confined to local treatment, using concentrations many times higher than could be obtained in the blood stream. Some newer antibiotics such as chloromycetin, streptomycin, and polymyxin, however, have a wide range of activity on Gram-negative organisms, and two are known to be capable of attaining a fairly high concentration in the blood stream; for example, chloromycetin can be initiated at 40 to 80 μg. per ml. and maintained at 20 μg. per ml. when given by mouth (Woodward *et al.*, 1948), and streptomycin, by injection, between 10 and 20 μg. per ml. (Merck, 1947). We therefore considered it of some importance to undertake *in vitro* tests with these newer antibiotics against *Pf. whitmori.*

There is considerable literature on streptomycin and its properties, but less information about chloromycetin and polymyxin. We therefore give a few notes.

Chloromycetin, together with its production, purification, and antibacterial effects, both *in vitro* and in experimental animals, is fully described by Smith and co-workers (1948); the first general announcement on this antibiotic was made by Ehrlich and his colleagues (1947). This latter paper was summarized in a leading article in the *British Medical Journal* of Aug. 28, 1948 (p. 428). Chloromycetin is an antibiotic substance obtained during the growth in culture of a variety of *Streptomyces* isolated from soil in Venezuela. An identical substance has been obtained from a variety isolated from compost in Illinois (Carter *et al.*, 1948).

As an antibiotic, chloromycetin is unique in so far as it contains both nitrogen and non-ionic chlorine and in being well absorbed when taken by mouth. It is a crystalline substance and is comparatively stable under conditions of widely varying temperature and *p*H. (We have found no loss of potency in chloromycetin–saline solutions kept in the refrigerator for three months.) It also has a low degree of toxicity in experimental animals.

Chloromycetin inhibits the growth of rickettsiae and of various Gram-negative organisms, including *Brucella, Bacterium coli, Shigella paradysenteriae,* and Friedländer's bacillus, the last two being conveniently used as test organisms. We have found it markedly inhibitive *in vitro* to 15 Malayan strains of *Salmonella typhi,* to the "Inaba" and "Ogawa" strains of *Vibrio cholerae,* and to *Haemophilus influenzae* (a Malayan penicillin-insensitive strain), using concentrations of chloromycetin obtainable in the blood when given by mouth—that is, 40 to 60 μg. per ml. (Supplies of chloromycetin for such tests were received by courtesy of Dr. J. E. Smadel, who also provided samples of polymyxin, these two antibiotics being at present produced in experimental quantities by Parke, Davis and Co. and Lederle Laboratories respectively.)

Polymyxin is an antibiotic elaborated during the fermentation of various media by certain strains of *Bacillus polymyxa* (Benedict and Langlykke, 1947; Stansly and co-leagues, 1947). It is said to inhibit a wide variety of Gram-negative and Gram-positive bacteria. *Brucella* and *Bact. coli* are used as test organisms in assaying the amount of polymyxin in solutions. This antibiotic appears to be a basic polypeptide (Florey, 1948—personal communication) and we have found that it inhibits Malayan strains of *Salm. typhi* but is less active against *Salm. paratyphi* A and *Salm. paratyphi* B when used in the same relative small concentrations (1 to 5 μg. per ml.).

The technique of testing was the ring-cup method, varying concentrations of the four antibiotics being placed in glass cylinders 15 mm. in diameter sealed on to the surface of culture plates seeded with *Pf. whitmori.* The results of repeated tests were as follows: streptomycin and polymyxin in concentrations up to 1,400 μg. per ml. failed to inhibit the growth of *Pf. whitmori*; penicillin up to 700 units (525 μg.) per ml. showed a maximum inhibition zone of 28 mm.* Chloromycetin, however, in concentrations clinically obtainable in the blood (60 μg. per ml.) gave an inhibition ring of 24 mm. Similar amounts of chloromycetin tested against 15 Malayan strains of *Salm. typhi* gave inhibition zones of 29 to 31 mm.

It is concluded that in cases of melioidosis chloromycetin should be of some benefit when used alone or combined with one of the sulphonamide compounds—sulphamezathine, sulphathiazole, or sulphadiazine.

### Comment

It was of particular interest to note the inhibitory effect on *Pf. whitmori* of chloromycetin, which is produced by one species of streptomyces, as against the complete lack of effect from streptomycin, which is elaborated by another—i.e., *Streptomyces griseus.* But the streptomyces, which are likely to receive further attention as a source of antibiotics, present puzzling features; and Carter *et al.* (1948) have pointed out that the two varieties of streptomyces of widely differing origin (Venezuela and Illinois) which produce the slowly toxic chloromycetin are very closely related to *Streptomyces lavendulae,* from which the more toxic streptothricin is obtained.

The complexity of this subject, however, has been stressed by Waksman (1947), who mentions the widely differing chemical nature of antibiotic substances—for example, lipoid-like bodies (pyocyanase), pigments (pyocyanin), polypeptides (gramicidin), sulphur-bearing compounds (penicillin), and quinones and organic bases (streptomycin)—that is, they have no resemblance except for their general origin.

### Summary

The case history of a patient with melioidosis is given. He remained afebrile throughout weeks of observation. His gland abscess resolved rapidly under treatment with sulphapyridine and during the subsequent six years he had no recurrence.

Sulphamezathine, sulphathiazole, and sulphadiazine have also been used for treating melioidosis (abscesses in bone, skin and lung). Sulphadiazine is one of the less toxic compounds and it showed relatively a more marked inhibition of *Pf. whitmori* in a series of *in vitro* tests.

The antibiotics streptomycin and polymyxin were found to have no inhibitory effect on *Pf. whitmori.* Penicillin, except in very high concentrations unobtainable in the blood stream, also had no effect.

Chloromycetin, a new antibiotic obtained from a streptomyces, inhibited the growth of *Pf. whitmori* at concentrations obtainable in the blood when the antibiotic is given by mouth, and its clinical use, either alone or in combination with sulphonamides, is therefore suggested.

*But only 2.5 units of penicillin per ml. are obtainable in blood after an intramuscular injection of 250,000 units (Dyke, 194

REFERENCES

Benedict, R. G., and Langlykke, A. F. (1947). *J. Bact.*, **54**, 24.
Carter, H. E., Gottlieb, D., and Anderson, H. W. (1948). *Science*, **107**, 113.
De Moor, C. E., Soekarnen, and van der Walle, N. (1932). *Geneesk. Tijdschr. Ned.-Ind.*, **72**, 1618.
Dyke, S. C. (1947). *Recent Advances in Clinical Pathology*, p. 110. London.
Ehrlich, J., Bartz, Q. R., Smith, R. M., and Joslyn, D. A. (1947). *Science*, **106**, 417.
Grant, A., and Barwell, C. (1943). *Lancet*, **1**, 199.
Harries, E. J., Lewis, A. A. G., Waring, J. W. B., and Dowling, E. J. (1948). Ibid., **1**, 363.
Hasle, and Nguyen-Duc-Khoi (1937). *Bull. Soc. Méd. Chir. Indochine*, **15**, 664.
Leading Article (1948). *British Medical Journal*, **2**, 428.
Mackie, T. J., and McCartney, J. E. (1946). *Handbook of Practical Bacteriology*, p. 679. Edinburgh.
Mayer, J. H., and Finlayson, M. H. (1944). *J. R. Army med. Cps*, **82**, 4.
Merck, E. (1947). Circular on Streptomycin.
Miller, W. R., Pannell, L., Cravitz, L., Tanner, W. A., and Ingalls, M. S. (1948). *J. Bact.*, **55**, 124.
Mirick, G. S., Zimmermann, H. M., Manner, G. D., and Humphrey, A. A. (1946). *J. Amer. med. Ass.*, **130**, 1063.
Nicholls, L. (1934). *Ceylon J. Sci.*, **3**, 183.
Peck, C. R., and Zwanenburg, T. (1947). *British Medical Journal*, **1**, 337.
Smith, R. M., Joslyn, D. A., Gruhzit, O. M., McLean, I. W., Penner, M. A., and Ehrlich, J. (1948). *J. Bact.*, **55**, 425.
Stansly, P. G., Shepherd, R. G., and White, H. J. (1947). *Bull. Johns Hopk. Hosp.*, **81**, 43.
Stanton, A. T., and Fletcher, W. (1932). *Studies from the Institute for Medical Research, F.M.S.*, No. 21. Bale, London.
Sudibyo, R. M. S. (1938). *Geneesk. Tijdschr. Ned.-Ind.*, **78**, 1424.
Waksman, S. A. (1947). *Microbial Antagonisms and Antibiotic Substances*, 2nd ed. New York.
Woodward, T. E., Smadel, J. E., Ley, H. L., Green, R., and Mankikar, D. S. (1948). *Ann. intern. Med.*, **29**, 131.


# Medical Memoranda

## A Case of Charcot's Disease of the Cervical Spine

The following case of Charcot's joint disease of the cervical spine was recently under treatment at the C.M.S. Hospital, Old Cairo.

CASE HISTORY

The patient, an Egyptian, first came to the hospital in 1944 complaining of difficulty in walking. A Kahn test of cerebrospinal fluid and blood was negative, but the C.S.F. contained 70 mg. of albumin per 100 ml. and 76 cells per c.mm., and clinically the case appeared to be one of tabes dorsalis, a rare disease in Egypt. This diagnosis was confirmed by Colonel Spillane, neurological specialist, who kindly examined him.

During the next year the patient had almost continuous treatment with N.A.B. and bismuth and improved considerably until he became able to walk two to three miles without undue fatigue. He remained well until April, 1947, when he began to feel "pins and needles" in the right arm and noticed some wasting of the muscles of his right hand; there was also clicking in the neck on forward and backward movement of the head. He did not suffer any serious disability, however, and continued his work as a clerk until October, 1947, when he quite suddenly had an attack of retention of urine, which had to be relieved by catheter. From this time onwards he had difficulty in micturition on and off, and gradual loss of power in the right arm and hand until Feb. 6, 1948, when he suddenly became unable to raise the arms at the shoulders or to flex them at the elbows, and there was a burning pain in the region of the right shoulder, made worse by bending the head backwards. He had also noticed girdle pains.

On Feb. 13 he was admitted to hospital. On examination he was seen to be a thin, ill-looking man, aged 55. He was alert mentally, gave answered questions intelligently, and his speech was normal. He gave a history of having had syphilis at the age of 18, and stated that a Kahn test on the blood serum, done a few weeks previously, had proved mildly positive. He held his head somewhat flexed. Flexion and extension of the neck were fairly free, but there was marked clicking on bending the head backwards, and this movement caused severe pain to radiate down the right arm. Examination revealed the following signs:

A left internal squint, stated by the patient to have been present since he was 18 years of age. Very small regular pupils, inactive to light and reacting sluggishly to accommodation. The cranial nerves, apart from the 6th, were normal. There was complete loss of power in abduction of the arms at the shoulders and of flexion at the right elbow, but some weak flexion was possible at the left elbow. Dorsiflexion of both wrists was very weak. There was marked wasting of both deltoid and biceps muscles and of the intrinsic muscles of both hands. In contrast to this weakness of flexion, extension at the elbows was quite strong. In the lower limbs the power was good in all muscle groups, but there was some sensory ataxia, as shown by the heel-to-knee test, especially on the left. The triceps jerk was active on both sides, but the biceps and supinator jerks were absent. The abdominal reflexes were very active. The knee jerks were present on both sides, but the ankle jerks were absent. Plantar response was indeterminate. There was no loss of appreciation of pin-prick or light touch, and some hyperaesthesia was present in the lower limbs. The sense of position was normal and Romberg's sign was positive. Sensibility to deep pain was much diminished, but the vibration sense was normal. There was no astereognosis. At first some difficulty was experienced in micturition, but this soon disappeared.

*Investigations.*—The cerebrospinal fluid was normal in appearance, with no increased tension; cell count, 2 per c.mm.; albumin, 70 mg. per 100 ml.; globulin, 10 mg. per 100 ml.; colloidal benzoin reaction, 0000022200000000; Kahn test and Wassermann reactions, negative.

Radiograph showing bony changes

The Kahn blood reaction was also negative. Radiographs showed marked bony changes (see fig.). I am indebted to Dr. Nessem Abu Saif, professor of radiology at Kasr-el-Aini Hospital, for the following report: "There is deformity, partial collapse, and backward subluxation of C3, 4, and 5, with bony condensation of an ivory appearance and irregular new bone formation, especially on the anterior aspects of these vertebrae. The intervertebral disks are preserved. This bizarre deformity is typical of Charcot's joint disease."

*Treatment.*—The patient was put on antisyphilitic treatment and received 500,000 units of penicillin daily for 10 days; 10 injections of N.A.B., given twice weekly, the dose rising from 0.15 g. to 0.6 g., then 0.6 g. weekly for 10 weeks; and "bismostab" 1 ml. weekly for the last five weeks. During the whole period he was taking by mouth liq. hyd. perchlor. ¼ dr. (1.75 ml.) and pot. iod. 10 gr. (0.65 g.) three times a day.

Under this treatment there has been definite clinical improvement. Micturition is normal. He can walk better and there has been a return of power to a limited extent of flexion at the elbow. He can now bring his hand to his mouth. The shoulder muscles, however, are still very weak, and the small muscles of the hand on both sides are very wasted. The sensation of pain in the right shoulder, of which he complained, is much less, but is felt occasionally. It is considered unlikely that any more improvement can be expected.

The interest of the case lies in the fact, first, that while the clinical picture is atypical, and there are only very mild changes in the C.S.F. to indicate an old syphilitic infection, the changes in the cervical spine are typical of Charcot's disease of the spine; secondly, that the cervical spine is very rarely affected by tabetic arthropathy, the lumbar region being the commonest site.

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P.M.O., Church Missionary Society Hospital, Old Cairo.

The Ministry of Health has issued a new list of treatment centres for venereal diseases. It covers the United Kingdom and Eire, and gives the names of the centres, the towns where they are situated, and the times when patients are seen.

# Reviews

## GROUP PSYCHOTHERAPY

*The Practice of Group Therapy*. Edited by S. R. Slavson. Foreword by Nolan D. C. Lewis, M.D. (Pp. 271. 21s.) London: Pushkin Press.

The treatment of patients in groups can now be regarded as an essential part of the psychotherapist's equipment. As in the case of individual therapy, the procedures vary as widely as psychotherapists' attitudes to the behaviour disorders. The editor of this volume—one of the best-known American workers in this field—and his contributors follow psycho-analytic thought, for the methods described most fully are those founded on the appreciation of transference relationships and in particular on the adequate treatment of the hostile feelings that enter into these relationships.

Slavson and his co-workers have developed two main methods—activity group therapy and interview group therapy. In the first, which is for children, the therapist provides a socially tolerant environment in which dominant themes of the inner world can be acted out. The therapist does little or no interpretation, and the modifications in the child's inner world which enable him to improve his relations with his outer world take place by the acting-out process in the "permissive" environment. The second method, the one of choice for adults, consists in spontaneous discussions by the group. Here the therapist makes interpretations through which the members gain insight into, and hence release from, their difficulties. The actual processes within groups conducted along these two main lines are clearly described in a series of contributions on a variety of psychological disturbances. Those starting to give group treatment will regret the omission of a detailed account of how adult groups are begun—how to introduce the idea of group treatment and to conduct the opening sessions.

The writers confirm the view that group therapy in skilled hands has very great potentialities. Equally, they expose the fact that much critical thought and systematic study are needed on both principles and practice. It is not at all clear, for example, why the composition of groups has to be so carefully planned. Again, in the interview-therapy method it is difficult to see why "relationship group therapy" is described as a distinct variant. The latter method is characterized by the analysis of the transference relationships between members of the group and between them and the therapist. But if the basic principles of psycho-analysis are accepted—and it is stated that these are fundamental to all brands of psychotherapy—we may ask whether the members of a group can achieve full insight into their difficulties without these interpretations. How else can the innumerable projections and other unconscious manipulations of the relationships in the group be brought to the patients' awareness? Moreover, in the acting-out process of activity therapy it is difficult for a psycho-analyst to imagine an unconscious need-system undergoing a radical change unless the patient gains insight through interpretation. The cases quoted certainly seem to have benefited, but it is not clear whether the improvement is the result of acting-out or of the interpretations that must have been given by other members of the group. Spontaneous testing of fantasy against reality is one of the most important ways in which the child's personality develops, so that there is no question of denying the possible effects of such a process. It is therefore puzzling to read that *pre-school* children, in whom the acting-out process would normally be most prominent, are not suited to activity therapy since they apparently have to be given insight through interpretation. It is possible that the methods of describing the cases suitable for activity therapy and interpretative procedures are not adequate.

These and many other points are no doubt in the minds of the writers, who are to be congratulated on their pioneering work in this very complicated subject. This is a most useful volume for all psychotherapists, and a special word of praise is due to the editor on the way he has obtained a unified work by applying his subject to his contributors.

J. D. SUTHERLAND.

## PROTEIN IN NUTRITION

*Proteins and Amino Acids in Nutrition*. By Melville Sahyun, M.A., Ph.D. (Pp. 566; illustrated. £2 5s.) New York: Reinhold Publishing Corporation. London: Chapman and Hall. 1948.

This book is about the all-important role of protein in nutrition including the consequences of deficiencies of protein and, with the limits of knowledge, of specific amino-acids. Consideration is also given to the metabolic interrelations between protein and carbohydrates, fats, vitamins, and mineral salts. Dr. Sahyun has acted as editor and has written the foreword and the chapter on "Plasma Proteins and their Relation to Nutrition"; the introduction is by H. B. Lewis, and the fourteen other chapters are written by experts in their own particular fields. For example, H. H. Mitchell writes on "The Biological Utilization of Proteins and Protein Requirements," and H. J. Deuel on "Caloric, Vitamin, and Mineral Requirements with particular reference to Protein Nutrition." Although there appears little on protein digestion in the ruminant, the nutritive aspects of meat and meat products are considered, and H. J. Almquist gives an account of the amino-acid requirements of avian species. The special problems associated with pregnancy, paediatrics, wounds, and immunity are considered, as is also the protein nature of toxins, antitoxins, filtrable viruses, and related substances. One of the most interesting chapters is that on the history of the significance of proteins in nutrition.

A compilation by many authors generally lacks unity, but the authors of this book have combined to present a very interesting and useful series of essays which are well knit together. The references are adequate for the purpose, and at the end of the book there are two appendices: (1) "Proximate Composition of American Food Materials"; and (2) "Nutritive Value of 100 g. of Selected Foods, Edible Portion." These have been compiled from U.S. Department of Agriculture publications.

D. P. CUTHBERTSON.

## LETTERS OF NOAH WEBSTER

*Webster, Noah. Letters on Yellow Fever addressed to Dr. William Currie*. With an introductory Essay by Benjamin Spector. Supplement to the *Bulletin of the History of Medicine*, No. 9. (Pp. 110. $2.) Baltimore: The Johns Hopkins Press. 1947.

The subject matter of these letters is of considerable historical interest, though intrinsically of little importance, because, though they embody the views of "an intelligent layman" on the origin and propagation of yellow fever, they are views held before the work of Finlay and of Reed, Carroll, Lazear, and other members of the American Commission who cleared up so much which had till then been obscure. Webster does not, as he states, wish to "intrude into the province of the [medical] faculty," "not being acquainted with medical science myself," and later, "Facts are not to be reasoned away by airy speculation." Yet in 25 letters written between Oct. 26 and Dec. 20, 1797, he bases on personal observation and opinions and facts communicated to him by "medicinal friends" a mass of airy speculation.

Webster ridicules the idea of the importation of yellow fever generally. He mixes up all sorts of infections, thus "Plague is a higher grade of the yellow fever, as the yellow fever is of the typhus or contagious fever"; again, "The symptoms [of the plague of Justinian, A.D. 542] were exactly the same as we observe in the violent case of yellow fever." "Dysentery is acknowledged . . . to be the same disease as yellow fever falling on the intestines."

These quotations will suffice to show that the letters form a curious collection. The main interest of this book and the most absorbing is the introductory chapter by Dr. Benjamin Spector, telling of the life of the author and giving a résumé of his ideas. Noah Webster was born at West Hartford, Connecticut, on Oct. 16, 1758, and died at the age of 85 in May 1843. He graduated at Yale University, qualified as a barrister, being admitted in 1781, and published the *American Spelling Book* in 1783 (60 million copies of this were issued). Ten years later he became editor of two papers, a daily and a bi-weekly. He took much interest in copyright activities and

so passed on to politics. As side-lines he studied climatology, vital statistics, and health questions, and in 1799 published his *History of Epidemic and Pestilential Diseases.* He was in advance of his times in advocating taking the public into confidence on general health matters.

Dr. Rush, of Philadelphia, was much impressed by the *Letters* and tried to find a publisher, but, as he said, practically all printers and booksellers believe that yellow fever is imported and are therefore prejudiced against Webster's (and Rush's) opinions. Consequently Rush suggested getting them printed in London and promised the author an introduction to Dr. Lettsom, but nothing came of this, and the letters were never published except in their original form in 1797 in the New York *Commercial Advertiser.*

Noah Webster, by reason of his zeal and persistence, deserves to be included among non-medical men who have furthered interest in health subjects—men such as Louis Pasteur, Edwin Chadwick, Jeremy Bentham, John Howard, Mary Wortley Montague; and the student of medical history owes a debt of gratitude to the editor of the *Bulletin of the History of Medicine* for making these letters and the introductory essay available to a wider circle of readers.

H. HAROLD SCOTT.

## COMPULSORY HEALTH INSURANCE

*The Issue of Compulsory Health Insurance.* A Study prepared at the request of Senator H. Alexander Smith, Chairman of the Subcommittee on Health of the Senate Committee on Labour and Public Welfare. By George W. Bachman and Lewis Meriam. (Pp. 271. No price.) Washington: The Brookings Institution. 1948.

The latest addition to the steady stream of books on this subject coming from the U.S.A. is issued under the auspices of the Brookings Institution, which is "devoted to public service through research and training in the social sciences." It was prepared at the request of the Senate Committee on Labour and Public Welfare. The Institution was told that the issue to be examined was "not whether it shall be the policy to make medical care available to those who cannot afford to pay the full cost, but how the activities in this field should be planned, integrated, and systematized." It was further said that two major plans are under Government consideration: (*a*) to make grants in aid to the several States and let them design a programme to suit their own convenience, grants being given only to those States whose programmes comply with central requirements; and (*b*) to adopt a complete Federal compulsory health insurance. The Institution was asked to submit a report which would examine "all the evidence in support of or against both these plans."

The Institution committed the task to two men both of whom had large experience in medical and general sociology, and their report is a testimony to their thoroughness. There are masses of statistics; every imaginable question on the subject is asked and answered with apparent impartiality. In their summing up the investigators make some novel suggestions arising out of their experience. They say "the average lack of medical care in persons belonging to the 2,000 dollar and over income group at 1941 levels is due more to failure to give medical care high priority than to lack of income." There is a steady movement from the lower income levels. In 1930–6 about one-seventh of the population had incomes of from 2,000 to 5,000 dollars. In 1946 half the population was in this higher range. The figures of expenditure show that more money is spent by this group on cars, liquor, tobacco, and recreation than on medical care, which is supposed to be a necessity. The investigators suggest that much of the problem could be met if the public could be induced to give medical care its due priority, being encouraged to join voluntary approved agencies by suitable income-tax allowances. They agree that there would be a substantial number unable to meet the cost of medical care on any insurance system, whether voluntary or compulsory.

The book well deserves the attention of all interested in the subject. Its origin would seem to show that the politicians mean to do something about it—but then they have been saying so for some years now, and so one never knows. Perhaps they are waiting for a Gallup Poll.

ALFRED COX.

## BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

***The Secret Life of Salvador Dali.*** By Salvador Dali. (Pp. 423. 42s.) London: Vision Press. 1948.

The autobiography of the surrealist painter.

***British Chemicals and Their Manufacturers.*** Published by the Association of British Chemical Manufacturers. (Pp. 141.) London: British Chemical Manufacturers. 1949.

The directory of the Association of British Chemical Manufacturers (supplied free to those who use it for professional or business purposes).

***Atlas of Human Anatomy.*** By M. W. Woerdeman, M.D., F.R.N.A.Sc. Vol. 1. (Pp. 512. 70s.) London: H. K. Lewis. 1948.

This volume is on osteology, articulations, and musculature.

***The Chest and the Heart.*** Edited by J. A. Myers, Ph.D., M.D., and C. A. McKinlay, M.D. (Vol. 1, pp. 1,021; vol. 2, pp. 824. 147s. for two vols.) Oxford: Blackwell Scientific Publications. 1948.

An illustrated textbook, with detailed accounts of treatment.

***The Commonsense Psychiatry of Dr. Adolf Meyer.*** Edited by A. Lief. (Pp. 677. 39s.) London: McGraw-Hill. 1948.

Contains 52 of Meyer's papers, with a biographical narrative.

***British Surgical Practice.*** Edited by Sir Ernest Rock Carling, F.R.C.S., F.R.C.P., and J. Paterson Ross, M.S., F.R.C.S. Vol. 4. (Pp. 486. 60s.) London: Butterworth. 1948.

Authoritative articles in alphabetical order (F–H) on the practice of surgery, with references.

***And Now to Live Again.*** By Betsey Barton. (Pp. 160. 7s. 6d.) London: Quality Press. 1948.

A discussion of the problems of disabled people by a patient who is herself disabled.

***Toxoplasmosis.*** By C. D. Binkhorst. (Pp. 163. Paper covers, 15s., cloth covers, 19s.) London: H. K. Lewis. 1948.

An account of the clinical, serological, and histopathological aspects, with special reference to eye manifestations.

***A History of Science.*** By Sir W. C. Dampier, Sc.D., F.R.S. 4th ed. (Pp. 527. 25s.) Cambridge: University Press. 1948.

Includes the relations of science with philosophy and religion.

***Functional Neuro-Anatomy.*** By A. R. Buchanan, M.D. (Pp. 242. 32s. 6d.) London: Henry Kimpton. 1948.

A textbook for medical students.

***Psychiatry in a Troubled World.*** By W. C. Menninger, M.D. (Pp. 636. 30s.) London: Macmillan. 1948.

A study of the problems and practice of psychiatry in the U.S. Army in the recent war.

***Elementary Anesthesia.*** By W. N. Kemp, M.D., C.M. (Pp. 289. $5.00.) London: H. K. Lewis. 1948.

A practical account intended for student and general practitioner.

***Physician's Handbook.*** By J. Warkentin, Ph.D., M.D., and J. D. Lange, M.S., M.D. 5th ed. (Pp. 293. $2.) California: University Medical Publishers. 1948.

A summary in note form of diagnostic procedures.

***Joseph Lister: The Friend of Man.*** By H. C. Cameron. (Pp. 180. 17s. 6d.) London: Heinemann. 1948.

A biography by the son of Sir Hector Clare Cameron, house-surgeon and lifelong friend of Lister.

***Clinical Urology.*** By L. E. McCrea, M.D., F.A.C.S., F.I.C.S. 2nd ed. (Pp. 503. $6.50.) Philadelphia: F. A. Davis. 1948.

A practical book intended for general practitioners and students.

***Pathologie Médicale.*** By P. Vallery-Radot and others. (Pp. 1,408 No price.) Paris: Flammarion. 1948.

A textbook for students.

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## FINANCE OF THE N.H.S.

The supplementary estimate of £58 million for the National Health Service may be in part an indication of medical needs formerly unsatisfied, but it is also a sign that the Government was far out in its estimate of the cost of the Service introduced in July last year. For example, the supplementary ophthalmic services, estimated to cost £2¼ million, are now expected to require over £14 million, and the estimate of £8 million for general dental services has swollen to the figure of £20½ million. These matters are being debated in the House of Commons as we go to press. Large though these increases may be (and the additional £52 million needed for the Ministry of Food) they nevertheless bring home to the country the importance of these two factors in the health of the nation—food and medical services. In this week's *Journal* Dr. Ffrangcon Roberts, in his role of vigilant critic of the contemporary medical scene, shows how the estimates have risen since the Beveridge Report in 1942. While it may be expected that the demand for spectacles and dentures will diminish after present defects have been made good, there remains the costly programme for building health centres and expanding the hospital system. Sir Frederick Menzies has already sounded a warning note[1] on hospital costs. He points out that in September, 1939, the cost of maintenance of a bed in one of the best of the voluntary hospitals in London was about £5 per week; the corresponding cost to-day is about £15 per week. Sir Frederick believes that unless steps are taken to reduce hospital costs these may have serious repercussions on other medical services. The *Observer*[2] says: "In principle it is hard to quarrel with the present social policy of the Government, bitter though its price is"; and it asks whether the people who have demanded the services now available are willing and able to foot the bill. The Government may yet consider it wise to ask the patient to make token payments for a doctor's services and for prescriptions. If this were considered feasible it would deter people from making unwarranted calls upon the doctor's time and unnecessary demands for pills and potions.

However necessary institutions and administration may be, it is essential that they should not be financed at the expense of the medical men and women who do the work of caring for the sick. That many doctors are suffering financial hardship has been admitted by Labour Party spokesmen in the House of Commons, and public opinion is aware of the discrepancy between the doctor's reward and that of those working in the ophthalmic and dental services. Everyone knows, as Mr. Fred Messer, M.P., put it, that the present situation cannot remain as it is. The first thing to be done is to remedy existing injustices; and the second—linked with the first—is to provide conditions that will continue to make medicine, and general practice in particular, a career that will attract able men into its ranks. It is, of course, not fair to pass judgment on a service barely eight months old, but the present prospect of overwork and financial anxiety is not one likely to appeal to the parents of a youth wanting to become a doctor. What can be alleviated now is the financial anxiety. Overwork can be remedied by the gradual distribution of medical men from over-doctored to under-doctored areas and by an increased entry into the profession.

In this week's *Supplement* appears a report on the remuneration of general practitioners drawn up by the General Medical Services Committee. This will be the main subject for discussion first at the Conference of Local Medical Committees on March 3 and later at a Special Representative Meeting on March 29. There are many ways in which the medical profession could have sought a solution to the problem of underpayment for work done. The General Medical Services Committee has adopted the approach of the Government when it decided to establish a Central Fund from which enough money could be distributed to general practitioners in terms of the recommendations of the Spens Report. The size of this Fund was related to an expected number of 17,900 principals. But on the appointed day rather more than 20,050 practitioners had joined the Service, and the number now is approximately 20,500. Allowing for assistants on the list there are at least 20,000 principals now in the Service. Therefore the Central Fund should be adjusted by about £3¼ million to provide for the additional 2,000 or so principals in the Service. The remuneration advocated in the Spens Report was in terms of the 1939 value of money, and the Report advocated that an adjustment should be made by applying what has become known as the betterment factor. In 1946 the Government decided on a factor of 20%—a figure which was not, and has not been, accepted by the medical profession. At that time it was estimated that the cost of living for the middle classes had increased between 45% and 50% over 1939. In 1948 this figure had risen to 85%. It will be recalled that the Government's 20% betterment factor was added to net remuneration, while it applied 55% to practice expenses. These two taken together amount to a betterment figure of 34% to gross remuneration. The view of the General Medical Services Committee is that on the basis of an increase in the cost of living from 45% in 1946 to 85% in 1948 the betterment figure applied to gross remuneration should be in the region of 70%. This alone would increase the Central Fund by more than £16½ million.

These proposals for increasing the Central Fund will be debated at the two important meetings next month, and, whatever modifications may be made in resolutions passed, the Association, backed up by the solid evidence of indisputable facts, will press the profession's case with the Ministry of Health. The Committee discussed the ways in which the sought-for increase in the Central Fund should be distributed in order to relieve existing hardship, to fulfil the recommendations of the Spens Report, and to provide

[1] *British Medical Journal Supplement*, 1948, **2**, 220.
[2] Feb. 13, 1949.

a solution that the profession and the public would regard as fair. It is obvious that the doctors who have suffered most (apart from rural practitioners, now helped by the increased Mileage Fund) are those with small lists in health resorts, seaside towns, and residential areas whose private practices have by the decision of the patients become public practices. The Committee therefore is recommending that the increased money to be asked for should be used to increase the capitation fee for the first 1,000 patients on the lists of all practitioners. If, for example, the Association succeeds in securing £16½ million more for the Central Fund this would mean that the capitation fee for the first 1,000 patients would be 35s. With the increase of the capitation fee for the first 1,000 patients on a doctor's list existing hardship would be relieved and at the same time the building up of large lists would not be encouraged.

The demand of the profession for adequate remuneration comes at a time when the Government and the country are, by the supplementary estimate of £58 million, being made uncomfortably aware of the cost of the National Health Service. If the Ministry of Health receives the proposals as sympathetically as it did the proposal for the increase of the Mileage Fund the Treasury will no doubt resist the increase of the expenditure demanded. But if saving has to be made it must not be made at the cost of the men and women who do the work of medicine. Parliament and the people demanded the Service and ignored those who suggested that such a service should be introduced gradually, so that by trial and error lessons could be learnt and mistakes avoided. In May of last year the medical profession with much reluctance decided to enter the Service, but during the past eight months has loyally co-operated with the Ministry to make it work as efficiently as possible in the circumstances. In the result doctors generally have been grossly overworked and some of them have been on the brink of financial disaster. If the Service is to evolve into what all would wish to see it be, then the proper payment of those who work in it must be the first consideration of the Government, because good work cannot be done in an atmosphere of discontent and a sense of injustice, and medicine will come to be looked upon as a profession to avoid.

## TSETSES OVER AFRICA

It was only after the first world war that the French, British, and Belgian authorities began to realize how widespread and how serious was trypanosomiasis in man and animals. The economic difficulties which affected Africa no less than other countries in the early 'thirties put a stop to many promising schemes for the control of sleeping sickness. At that time the British Treasury made no grant to finance such schemes, and each colony was dependent on its own financial resources or on such money as it could raise by loan. Despite this crippling poverty much was done, but with the passing of the Colonial Development and Welfare Act in 1940 and its augmentation in 1945 more ambitious schemes for the control of trypanosomiasis could be planned. The first international conference on trypanosomiasis was held in Lagos while the war was still on, and the latest was held in London last week. Representatives attended from the United Kingdom and Colonies, France, Belgium, Portugal, South Africa, Southern Rhodesia, and the Sudan. The proceedings were held in private, but we understand that about twenty papers were presented, including reports on field trials with "antrycide" in the Sudan and East Africa.

Four excellent reports on what has been already done have recently been prepared for the Tsetse Fly and Trypanosomiasis Committee appointed by the Secretary of State for the Colonies. Professor P. A. Buxton's contribution is an account of trypanosomiasis in East Africa[1] and Professor T. H. Davey's of conditions in West and Central Africa[2]: both reports contain the results of fact-finding tours. Included in the other two reports,[3,4] both written by Dr. T. A. M. Nash, are interesting accounts of original work: that dealing with the tsetse flies of West Africa will long remain the standard work on this subject. The other is a description of the Anchau experiment in Nigeria and shows how an area can be rendered tsetse free, and the whole life of the African raised to a higher plane, provided his willing co-operation is obtained by careful consideration and by explanation of every step. Saunders,[5] writing from the Gold Coast, has also insisted on the importance of what he terms "infiltrative propaganda" before undertaking trypanosomiasis campaigns. There are many difficulties, however, in propaganda, for the interpreter is considered not as a medium for conveying ideas but as a middleman with a prescriptive right to commission and emolument from both sides.

It is obvious that the control of trypanosomiasis presents different problems in different parts of Africa. The variables include the species and strains of trypanosome, the species of tsetse common in the area, the presence of big game, the prevalence of other epidemic diseases, and the psychological make-up of the African. The difference in the response of *T. gambiense* and *T. rhodesiense* to drugs is already well known. In Nigeria infections due to *T. gambiense* are more easily controlled by chemotherapy than those in the Gold Coast. Measures to control tsetses obviously depend on the species present: where *Glossina morsitans* is predominant, destruction of all the big game will often end trypanosomiasis. Such measures have enabled the reclamation of many thousands of acres in Southern Rhodesia, but as a rule *G. morsitans* is only one of the tsetses present. The inhabitants of some areas, especially in the Northern Territories of the Gold Coast, have been decimated by recurrent epidemics of influenza and cerebrospinal meningitis. When the adult male population is reduced below a certain level communal hunts cannot be organized, game increases, and so does *G. morsitans.* As a result farms are destroyed, and only those close to the village can be kept in cultivation. It follows that the fallow period is shortened, the fertility of the soil decreases, and malnutrition and sleeping sickness reinforce each other.

Little is known of the reasons why some tribes readily submit to the activities of sleeping-sickness diagnosis and

[1] *Trypanosomiasis in East Africa*, 1947, 1948. London: H.M.S.O.
[2] *Trypanosomiasis in British West Africa*, 1948. London: H.M.S.O.
[3] *Tsetse Flies in British West Africa*, 1948. London: H.M.S.O.
[4] *The Anchau Rural Development and Settlement Scheme*, 1948. London: H.M.S.O.
[5] *Farm and Forest*, 1944, **5**, 121.
[6] *British Medical Journal*, 1949, **1**, 63.
[7] *Nature, Lond.*, 1949, **163**, 89.
[8] *Commonsense and Colonial Development*, 1949. London.

treatment campaigns while others do not. How closely trypanosomiasis is bound up with the culture patterns of each tribe is shown by a consideration of the village pond, anathema to the sanitarian because it provides all-the-year breeding conditions for mosquitoes and tsetse flies. For the villager, however, the pond provides green plants which, when reduced to ash, are essential as a source of salt. In some areas the ponds contain fish: these are sacred, for either the lives of particular fish may be connected with the lives of particular villagers or the fish may house the souls of the ancestors. In other areas the banks of the pond form the local latrine, and the fish eat up the faecal matter. Any interference with the village pond may thus have serious repercussions.

In many parts of Africa trypanosomiasis of cattle and pigs is as serious as trypanosomiasis of man, for methods of effective control have hitherto been lacking. The use of aeroplanes for spraying D.D.T. has opened up a new approach, and the discovery of the phenanthridinium compounds marked a first step in chemotherapeutic control. A further advance will be made if the new drug antrycide (4-amino-6- (2′-amino-6′-methylpyrimidyl-4′-amino) quinaldine -1 : 1′-dimetho salts) lives up to expectations. We gave some information about antrycide in a recent annotation,[6] and a short account by the late Dr. F. H. S. Curd and Dr. D. G. Davey of the experimental evidence on which claims for the drug are based has now been published.[7] *T. congolense*, *T. vivax*, *T. brucei* of cattle, and *T. evansi* of camels appear to be controlled, but the action on *T. simiae*, a pig trypanosome, is unrecorded. The cost of each injection will work out at approximately 2s. 1½d., and since it will be necessary for prophylaxis to reinoculate cows at intervals of six or possibly four months the cost to the Government or to the individual cattle-owner will be considerable—a matter of some moment in a country such as Nigeria, where the average annual income of the population works out at twenty shillings. The question of drug fastness has still to be intensively studied, and, as in the case of proguanil, it will be some time before the true value of antrycide can be assessed.

Although eradication of the trypanosomes which infect cattle and pigs is a most important step in the supply of additional meat, there are other basic difficulties which will have to be overcome. In many areas there are already far too many cattle for the pasture available—this is because cattle represent currency and therefore power and prestige. Just as a dirty, torn Treasury note is still worth its face value, so a miserable scrawny cow is still a cow and represents a certain part of a bride-price or a sacrifice. Many cattle-owning African tribes, the Fulani in particular, are not attracted by anything that Western civilization can offer, and any attempt to reduce the number of cattle in order to improve the breed and prevent soil erosion is met by passive if not by active resistance. At present the quality of the stock is far too poor to fit it for the export trade. Thus, before cattle can be looked upon as an article of commerce by the African, there will have to be a radical change in animal husbandry, and this in many tribes will involve a complete change in social attitudes and culture patterns. When once this has been done it will be essential to replace thousands of square miles of elephant grass by more nutritious pasture, to provide water, and to stop soil erosion.

At present meat may not be imported into the United Kingdom from countries where virus diseases such as rinderpest or swine fever exist because of the risk of infecting domestic herds. Swine fever is rife in East Africa, and rinderpest still exists all over tropical Africa, game animals forming a reservoir. The problem of rinderpest is already being tackled in British colonies with the goat-adapted virus introduced by Edwards, but if the disease is ever to be controlled international action is essential. Only when these difficulties have been met will it be possible to organize marketing and to arrange for the canning of low-grade beef and pork and their residual products. In addition, as Rita Hinden[8] has pointed out, it will also be necessary to have cold storage at the abattoirs, refrigerated transport to the ports, and cold storage and suitable loading facilities at the ports. Anyone acquainted with the existing conditions on African railways or at African ports will realize what this involves. The great difficulty, however, perhaps more important even than the tsetse fly, is the attitude of the African cattle-owner. This will not be easy to change, and even if it can be done the question may well be asked, and in fact has already been asked by Africans, "How far are Western European nations, comparatively well fed by African standards, justified in removing from Africa first-class proteins in the shape of meat and eggs when African populations are still living on diets that are grossly deficient in proteins?"

## CHEMOTHERAPY IN LUPUS VULGARIS

Secondary pyogenic infection of a tuberculous process may respond well to sulphonamide therapy, with improvement in the general condition of the patient and in the tuberculous process itself. In 1940 Domagk[1] described an inhibitory action of sulphathiazole on the growth of the tubercle bacillus *in vitro* and in experimental animals, and encouraging results were reported by Malluche[2] in patients with non-pulmonary tuberculosis and by Baumann[3] in patients with pulmonary tuberculosis. Other investigators have claimed some successes with certain sulphones such as promin and diazone. In 1946 Domagk and his colleagues[4] showed that it was the thiazol and thiodiazol groups which were responsible for the inhibitory effect, and they reported on two compounds of the thiosemicarbazone group (named P698 and Q242) whose action, unlike that of sulphathiazole, was unimpaired by *p*-aminobenzoic acid and other antisulphonamide factors. Moncorps and Kalkoff[5] have reported on the use of these substances in the treatment of 26 patients with severe ulcerating lupus of the face who had previously been treated with ultra-violet light, caustics, grenz rays, and by other means without permanent improvement. All were admitted to hospital so that renal function tests and blood investigations could be carried out and toxic reactions controlled. The drugs, mixed with equal parts of sulphathiazole, were given over a period of several months, and the dosage was regulated according to the tolerance of the patient; in some cases 0.125 g. of the mixture was given eight times a day, in others 0.25 g. four times a day. Blood changes such as a mild secondary

[1] Reported at the Gynaecological Congress, Vienna, 1940.
[2] *Med. Klinik*, 1947, **42**, 314.
[3] *Dtsch. GesundhWes.*, 1947, **2**, 161.
[4] *Naturwissenschaften*, 1946, **1**, 315.
[5] *Med. Klinik*, 1947, **42**, 812.

anaemia or slight leucopenia were infrequent and occurred usually in the patients whose lupus improved considerably; the blood returned slowly to normal after cessation of treatment. Rarely the urine contained albumin and hyaline casts. In some cases pyrexial therapy appeared to produce a further improvement, particularly after drug treatment had been temporarily suspended owing to toxic reactions. Of the 26 cases treated, four were completely cured, three considerably improved, 10 made definite progress, six made only slight progress, and three remained unchanged. In three of the cases areas of skin treated with the Finsen lamp during the period of drug treatment improved more rapidly than untreated areas. The authors stress the importance of continuing treatment after apparent clinical cure and mention the danger of producing a resistant strain of tubercle bacilli if treatment is cut short without good reason. This report does not make extravagant claims for the cure of lupus vulgaris, and the importance of environmental factors in the assessment of therapy is stressed. The work is of interest in relation to the investigation of the treatment of leprosy by chemotherapy.

## SYRINGE STERILIZATION

During the latter part of the war the Medical Research Council appointed a committee to consider methods of sterilizing syringes, and the result of its labours was the now generally familiar memorandum, *The Sterilization, Use, and Care of Syringes.*[1] The chief conclusion reached was that no chemical method can be depended on to sterilize a syringe and that absolute safety can be assured only by dry heat at 160° C. or by autoclaving. The use of certain chemicals was also objected to on account of their possible effects either on medicaments injected or on blood withdrawn for diagnostic tests. Provided that they were applied only to syringes used for aseptic purposes, methods such as simple boiling or immersion in spirit which do not achieve absolute sterility were considered permissible in certain circumstances.

At about the same time an inquiry into the same subject was undertaken in Switzerland by a commission appointed by the Swiss Society of Surgery. Its findings appeared in the form of a monograph by one of the members of the commission, Dr. Ernst Baumann.[2] A second edition of this has now appeared and is of particular interest, since it discusses the M.R.C. memorandum at considerable length and disagrees with it in several directions. Dry heat is granted to be an ideal method when feasible, but a higher temperature is recommended: this is stated as 180°–200° C., and the time-honoured Continental indicator of its attainment, the browning of cotton-wool, is also mentioned (but not the fact that this roasting of cotton-wool volatilizes tarry material which may condense on the syringe and needle). Autoclaving is approved, as also is a similar method almost unknown in this country, that of boiling under pressure; this would of course be feasible in any pressure-cooker. The remaining alternative method of absolute sterilization is boiling at atmospheric pressure in a disinfectant solution: this is a proceeding suggested for the general practitioner with neither time nor equipment for anything else. Four solutions are suggested—2% sodium carbonate with or without 0.1% of formalin, 2% "desogen" (a quaternary ammonium compound evidently widely used in Switzerland), or 1 in 20,000 "merfen" (phenylmercuric borate). These reagents have to be washed out of the syringe with sterile distilled water before use; and this may seem to some English minds to be a serious objection to such methods, because supposedly sterile distilled water is a notorious source of contamination. If, as suggested, a fresh ampoule is used on each occasion, this danger should be obviated. The Swiss commission has been at great pains to show that such traces of these disinfectants as may remain in the syringe can do no harm, and elaborate pharmacological tests are described showing that adrenaline, insulin, strophanthin, penicillin, and certain vitamins and hormones are unaffected by them.

Four other solutions are specified, two containing formalin, one desogen, and one merfen, in which syringes used only for aseptic purposes and otherwise free from any danger of contamination may be placed between one use and another. This is almost the only concession made in an otherwise strict insistence on methods which can be depended on to ensure absolute sterility. It is interesting that there should be some conflict of opinion between experts in different countries on so apparently simple a matter as this. It would also be interesting to know what proportion of doctors in each country disregard all such recommendations and continue to use methods which all authorities are agreed in condemning.

[1] M.R.C. War Memorandum No. 15, 1945, H.M.S.O., London.
[2] *Sterilisation und Sterile Aufbewahrung von Spritzen und Hohlnadeln*, 1948, Basle.

## FISH POISONING

Among the medical surprises of the recent war were the widespread incidence of mite-borne typhus in South-east Asia and the presence of Q fever in Southern Europe. In both the infections were the result of non-immune individuals going into regions not usually visited in normal times and contracting diseases which must have been present among the indigenous populations. An experience of the opposite kind has recently been reported by Ross,[1] who observed as an aftermath of war an illness previously unknown in a native population. At Fanning Island, in the Central Pacific, a fish-eating population, who had a sound practical knowledge of which fish were good to eat and which species or organs were not, in 1945 began suffering from an illness characterized by a fairly sudden onset of gastro-intestinal symptoms preceding or following paraesthesia of the limbs, face, and body. The illness followed a fish meal 3–24 hours previously. The body temperature was subnormal, pupils were usually contracted, and general weakness was a common complaint.

In the following 18 months nearly half the population had been attacked by this illness. After feeding fresh fish to cats, dogs, and domestic ducks Ross was left in no doubt about the immediate cause. In the animals paralysis was the prominent sign. All the human patients recovered, but sometimes it was several weeks before the sufferer was quite well. Europeans appeared more susceptible than the natives. Discarding of the internal organs of the fish followed by thorough washing before cooking did not prevent the onset of symptoms, and it was quite clear from experiments with cats that the skeletal muscle of the fish contained the poisonous substance.

Ross found that both migratory and non-migratory species of fish were involved. He next observed that all fish causing poisoning had been caught in localities where surplus war material, comprising metals and condemned food, had been dumped in July, 1945. Fish poisoning first appeared four months later. The signs and symptoms observed in the cases on Fanning Island resembled those of mussel poisoning in North America,[2,3] in which death from respiratory paralysis may occur, but in the latter the

[1] *Med. J. Aust.*, 1947, **2**, 617.
[2] Sommer, H., Whedon, W. F., Kofoid, C. A., and Stohler, R., *Arch. Path.*, 1937, **24**, 537.
[3] Gibbard, J., and Naubert, J., *Amer. J. publ. Hlth*, 1948, **38**, 550.

onset was more rapid. Since it has been shown that the mussel poisoning is due to the dinoflagellates of the genus *Gonyaulax*, a plankton organism on which the mussels feed, Ross suggests that the fish poisoning at Fanning Island may have had a similar origin, and that the plankton and other creatures on which the fish feed might well be poisoned by substances originating in the deteriorating dumped war material. It is to be hoped that the physiological properties of the toxic substance or substances are being investigated and, if possible, that their chemical nature will be ascertained. Ross treated his patients by washing out the stomach in serious cases, the administration of cathartics and a nux vomica mixture, the application of local heat to the abdomen, and rest in bed.

## ARTERIAL EMBOLISM

The question of whether or not to operate in cases of embolism of the limb arteries is one on which there is divergence of view. Considering the high mortality recorded in published series of cases, in some exceeding 60%, and the poor subsequent outlook for patients with severe cardiac disease, some authorities now advocate conservative methods of treatment only; of these heparin, sympathetic interruption by paravertebral block, and intermittent venous occlusion are the most important. By thus abolishing the spasm of collateral vessels and preventing a spreading thrombosis in the main arterial trunk approximately two-thirds of the affected lower and nearly all the upper limbs can be saved. Others believe that the chances of avoiding gangrene are improved by operative removal of the embolus, at least from the lower limbs, and in a recent paper Warren and Linton report that survival of the lower limb was secured in 15 out of 18 cases (83%), the mortality being no greater than in the cases treated conservatively. It must be realized that these are the results of specialists in vascular surgery, with a wide experience of blood-vessel suture and of the care of ischaemic limbs, and it is unlikely that such success can be achieved by the general surgeon. Warren and Linton consider that embolectomy is the treatment of choice, but not if the embolism is in the popliteal artery nor in patients with advanced arteriosclerosis. As a general rule 10 hours is regarded as the longest period which should be allowed to elapse between impaction of the embolus and operation if the treatment is to have a good chance of success; but operation has proved successful up to 60 hours after impaction, and Warren and Linton do not believe that a definite time limit should be set. In nearly 90% of their cases the source of the embolus appeared to be within the heart, and it is noteworthy that little more than a half of the patients suffered the severe pain at the onset which is one of the classical symptoms.

A rational view would concede the value of both lines of treatment. Operative intervention is indicated in patients whose general condition and cardiac reserve are good enough to withstand the shock not so much of operation conducted under local anaesthesia as of the sudden return of blood flow in an ischaemic limb. Other prerequisites for operation are absence of severe atheroma and accessibility of the embolus without the risk of damaging collateral channels. In this connexion the results of Warren and Linton show that operative treatment is most successful when the site of the embolus is at the bifurcation of the femoral artery; fortunately this is much the commonest site for the lodging of emboli. Whether or not operation is decided on, in embolism of the limb arteries treatment by heparin and paravertebral sympathetic block should be carried out at the earliest possible moment, and, when there is doubt, failure to secure improvement in the temperature and colour of the extremity within an hour of the latter procedure may well tip the scales in favour of operation.

[1] *New Engl. J. Med.*, 1948, **238**, 421.

## NUFFIELD HOSPITALS TRUST

The Nuffield Provincial Hospitals Trust, endowed with a million Morris Motors shares, was founded in 1939. Its purpose was to co-ordinate on a regional pattern the hospital and ancillary medical services in the provinces and to make provision for the carrying on or extension of such services as were necessary to complete the co-ordination. The National Health Service Act has meant a redirection of its activities, not the cessation of them, and has afforded an opportunity for a report on what the Trust has accomplished in nine years. This report is published by the Trust from its offices at 12, Mecklenburgh Square, W.C.1.

Before the Trust came on the scene the co-ordination of hospital services had been much talked about, but little had been done. The Sankey Commission set up in 1935 recommended the division of the country into regions, with the formation of regional councils and a central council. It was this report, together with the example of the Joint Hospital Board in his own Oxfordshire and adjacent counties, which led Lord Nuffield to form the Trust. The scheme for regionalization which it put forward covered half the country. The Trust also embarked on a series of hospital surveys, and when, a little later, the Government announced its intention of making similar surveys it accepted the offer of the Trust to organize and finance them in the provinces. Of the ten survey teams set up, seven were appointed by the Trust.

Among other projects supported by the Trust, always with a view to the better co-ordination of hospital services, the most noteworthy was the setting aside of £100,000 for the creation of the first professorship and Institute of Social Medicine in Great Britain—at Oxford under Professor J. A. Ryle. A grant of £15,000 was also made to the University of Birmingham towards the cost of a similar professorship there. Two experimental bureaux of health and sickness records have been set up—one in Oxford and the other in Glasgow. The Trust has interested itself in health services as affecting children, students, industrial workers, and others, and grants have been made towards work in university centres in psychiatry, neurology, plastic surgery, and other branches of medicine. The Trust also assisted Professor Sir Howard Florey's research team at Oxford. Altogether it is a record of large beneficence wisely and discriminately applied.

The Government's acceptance of regional co-ordination still leaves a number of problems unsolved. The Trust expects to find plenty of work still to do—making scientific studies of services, conducting practical experiments to test promising ideas, and demonstrating how new methods may be an improvement on old. It is at present making a job-analysis of the work of nurses in the hope of throwing some light on the stubborn problem of nursing recruitment and training. Another investigation concerns the functional design of hospitals. It is always an occasion of regret when voluntary efforts, if efficient, are superseded by statutory organization, although such supersession is in itself the highest compliment which can be paid to such voluntary enterprises. But it is a pleasing circumstance when, as here, the voluntary body remains at the statutory elbow, to inform, to supplement, to prompt, to correct, or, more important, to avert the need for correction.

## ROYAL COLLEGE OF SURGEONS

### HUNTERIAN DINNER

The Princess Royal and the Duke of Gloucester attended the Hunterian Festival dinner at the Royal College of Surgeons in Lincoln's Inn Fields on Feb. 15.

Lord Webb-Johnson, who presided, read a message sent to the King from the Council and Court of Examiners expressing appreciation of his Majesty's interest as Visitor of the College, and stating that it was hoped soon to submit to his Majesty plans for the restoration of the College. The King in reply said he looked forward to seeing the plans for restoring the buildings towards which friends of the College in this country and overseas had contributed.

The Princess Royal, acknowledging tributes to the Royal Family, said it was the first time women had been present at the Hunterian dinner.

The toast "The College" was proposed by Mr. A. J. Beasley, High Commissioner for Australia, who spoke of the great value of the Sims Commonwealth Travelling Professorship, and of the Nuffield Benefaction which would make it possible for students to reside in the College. This would be much appreciated by medical men in the Commonwealth.

Lord Webb-Johnson, observing that ladies were present at the dinner for the first time, recalled that it was 40 years since Queen Mary, as Princess of Wales, had been present at the Hunterian Oration given by Mr. (later Sir) Henry Morris, and 22 years since the Princess Royal had attended the Oration by Sir Berkeley Moynihan, as he then was. The College of Surgeons was an important centre for postgraduate education, and to it came students from all parts of the Commonwealth. This was not a one-way traffic, and Fellows of the College went to the Commonwealth. Lord Webb-Johnson referred to the reciprocity now existing between the English and the Australian Colleges in respect of the Primary Fellowship. The teaching facilities of the College had been much increased by the munificence of the late Sir William Collins, and now Lord Nuffield's gift had made it possible to provide residential quarters in the College which would be especially welcomed by students from the Commonwealth.

The toast "The Guests" was proposed by Mr. L. E. C. Norbury and responded to by Mr. Norman Robertson, High Commissioner for Canada, and by Professor Lillian Penson, Vice-Chancellor of London University. Mr. Zachary Cope enlivened a distinguished occasion by proposing the health of the Hunterian Orator in verse, and the Orator, Mr. H. S. Souttar, replied.

## LADY TATA MEMORIAL TRUST

The trustees of the Lady Tata Memorial Fund invite applications for grants and scholarships for research in diseases of the blood, with special reference to leukaemia, in the academic year beginning on Oct. 1. Grants of variable amount are made for research expenses or to provide scientific assistants for senior workers. Scholarships are awarded as personal remuneration; their normal value has been £400 per annum for whole-time research, with proportionate adjustment for work on a part-time basis where this has been approved. Applications must be submitted before March 31, and the awards will be announced by the trustees in June. Further particulars and forms of application may be obtained from the secretary of the Scientific Advisory Committee, c/o Medical Research Council, 38, Old Queen Street, Westminster, London, S.W.1. The grants and scholarships are open to workers of any nationality and in any country in which it will be possible to make payments in the coming academic year. The available information on this point regarding particular countries outside the sterling area will be supplied to intending applicants on request.

The British Council has arranged for Miss Emily MacManus, matron of Guy's Hospital from 1927 to 1946, to visit Turkey at the beginning of February for a two weeks' lecture tour. Turkey, too, has the problem of attracting girls to the nursing profession, and Miss MacManus has been asked to talk to lay and professional audiences about the life of a nurse in Britain.

# Reports of Societies

## ARTIFICIAL PNEUMOTHORAX

In the Section of Medicine of the Royal Society of Medicine on Jan. 25 there was a discussion on the place of artificial pneumothorax in the treatment of pulmonary tuberculosis. Sir ADOLPHE ABRAHAMS presided.

Dr. F. H. YOUNG said that this subject was last discussed in the Section in 1921, the year in which he performed his first artificial pneumothorax. After twenty-seven years' experience he was still in doubt about the cases in which the treatment should be used, the details of the treatment, and the length of time for which it should be maintained. Since 1921 pneumothorax had had a tremendous vogue; in the early 'thirties it was given a trial whenever there appeared to be any justification for it. Opinion had now swung the other way, and a number of authorities regarded it as a dangerous practice only to be used in carefully selected cases.

Cases unsuitable for this treatment, even when it was possible, were those of dense fibrotic disease at the apex and those of tuberculous tracheobronchitis. Among the main complications were the recurrence of tuberculous empyema and bronchogenic spread, mainly to the other lung. After one or two refills a case should be screened if possible and reviewed as carefully as it was before induction was considered. At this stage, if there were extensive adhesions to a cavity area, the artificial pneumothorax should be regarded as having failed; where the adhesions were less unpromising it might be continued, but unless the cavities had disappeared by the end of a month other measures should be taken. Cavities which failed to collapse were the cause of a large proportion of disasters. He could recall only one case in which, without causing trouble, the pneumothorax had been maintained in the presence of an open cavity over a period of years.

Dr. Young proceeded to give figures from three sources—his clinic at Brompton Hospital, where he exercised only a general supervision, his clinic at St. Bartholomew's, and his private cases. He thought that the figures demonstrated the great advantage of having all the work in connexion with a given case—the selection, the organization of treatment, and so forth—in the hands of one individual from beginning to end. His figures did not bear out the view that the danger of great loss of function after pneumothorax was so considerable and so unpredictable—though unpredictable it certainly was—that it was better to do an upper stage thoracoplasty. It had been suggested that in a number of pneumothorax cases the cavities reopened. It was difficult to be dogmatic on that subject. He knew of one case in which a pneumothorax was performed twelve years ago and the lung allowed to expand, and now the cavities had reopened. But among his private cases he had had only two in which closed cavities had reopened.

At the Brompton Hospital he had been able to trace satisfactorily only about 40% of the cases. He had taken those cases which had attended the regional clinic for at least two years and had been followed either until death or grave illness or until the pneumothorax had been allowed to re-expand. At St. Bartholomew's 70% had been traced, and among the private cases 75%. In the Brompton series of 204 patients about 32% were dead or dying and 68% were alive and reasonably well. In the other two series combined there were 99 patients, and 11% were dead or dying and 89% were alive and mostly well. The proportion of unclosed cavities in the Brompton series was so much higher than in the others that it was thought better to exclude these cases, and, this being done, in the Brompton series 80% were alive and well, and in the other two series 95%. These figures referred only to those patients who came back to the clinic ambulant, and therefore the pneumothorax had been to some extent successful. His conclusion was that the revulsion against pneumothorax had been overdone; the revulsion should have been against pneumothorax work which was not done properly.

### After the Sanatorium

Dr. F. R. G. HEAF said that it was not always appreciated what a change there was between the quiet, orderly regime of

the sanatorium and the rough-and-tumble of the average household to which the patient returned. This change of environment had the most profound effect on his clinical progress. Although a patient might appear to have stabilized himself under sanatorium conditions there was no proof that there were not foci which would become active when he returned home and ran the risk of minor infections and ailments, as well as having a change of diet. The physician in charge of the case should be in possession of all the relevant facts. The spacing of the refills might need to be a little more frequent after discharge from the sanatorium, owing to the increased amount of exercise which the patient undertook. The importance of a regular timetable for attendance at the clinic, both for the convenience of the patient and also for clinical reasons, should be stressed. In some centres refills were given without previous *x*-ray examination. Surely pneumothorax treatment for out-patients should be given with the same care and under the same control as to in-patients.

Owing to shortage of beds there was a tendency to send people out of the institution with uncollapsed cavities, tuberculous lesions of the bronchi, and so on. If pneumothorax treatment was held to be of use it should be carried to its completion before sending the patients out. Once having got the patient, it was better to do the job properly. Patients with bilateral infections often did well under sanatorium conditions but relapsed under domiciliary treatment; the patient was not able to stand up to the strain of the domestic environment. The termination of pneumothorax treatment could also bring about difficulties. Minor complications would occur, and it was important in domiciliary treatment to have arrangements whereby a patient could go back to hospital for one or two nights to have complications attended to under the best possible conditions.

Dr. Heaf concluded with a plea for the keeping of careful records and for the development of a system whereby after-histories might be followed for five or ten years. It was time for another big survey of the real value of artificial pneumothorax under present conditions and in view of the improvements in technique which had taken place since the former survey was made.

### Limitations and Difficulties

Dr. PHILIP ELLMAN said that, no matter what form of treatment was contemplated, the general constitutional nature of the disease must not be forgotten, nor the possible influence of the inherited diathesis. Artificial pneumothorax as it was known to-day, used with discrimination and with adequate radiological control, had revolutionized the management of certain cases of pulmonary tuberculosis, but he proposed to speak rather of the limitations, disappointments, and difficulties of the method.

The procedure was attractive by reason of its simplicity, but the result depended very much on the anatomical nature of the collapse. Any incomplete pneumothorax should be abandoned in favour of other measures. The patient with acute febrile illness and active exudative disease was best treated initially by an adequate period of complete bed-rest. Streptomycin was a useful adjunct. The lapse of time gave an opportunity for the inflammatory process to subside and might even obviate the need for collapse therapy. In this connexion streptomycin might in future make pneumothorax a safe procedure. The risk of adhesions forming during the period of observation seemed to be more theoretical than real. In the presence of bronchial tuberculosis an ineffective pneumothorax might, by reason of symptomatic relief, give a false sense of security. "The physician's needle can be responsible for complications more dangerous than the surgeon's knife." It might have been to the advantage of the patient if the induction of pneumothorax had required as much skill as thoracoplasty. In many cases a thoracoplasty was to be preferred as an initial procedure to an ineffectual attempt to produce a pneumothorax.

On the mechanism of the closure of cavities there were opposing schools of thought. Bronchial obstruction was the chief factor in cavity closure. There was much to be said for bronchial drainage, and the use of the bronchoscope might avoid many complications. With regard to effusions, many of these were small, containing no tubercle bacilli on examination, but he regarded as potential empyemata effusions which began to contain tubercle bacilli. A reaction of this kind was much more likely with the unsatisfactory type of pneumothorax. Dr. Ellman concluded by repeating that an ineffective pneumothorax should be instantly abandoned to avoid complications.

### General Discussion

Dr. MAURICE DAVIDSON said that what had been learned from the discussion was the need for insisting that pulmonary tuberculosis was not a disease of the lung but a systemic disease with a local lesion.

Dr. NEVILLE OSWALD said that from a study of the records in English medical literature he had arrived at the conclusion that out of 1,000 cases of pulmonary tuberculosis roughly 400 would have had an artificial pneumothorax attempted at some time or other. The other 600 would, of course, include a large number of minimal cases as well as a number of far advanced. It appeared that there was a 20% improvement in the five-year survival rate as a result of carrying out artificial pneumothorax.

Dr. F. A. H. SIMMONDS said that there were two principal ways of controlling pulmonary tuberculosis by collapse therapy—namely, by a good artificial pneumothorax or a good thoracoplasty. If neither one nor the other could be done, collapse therapy should be avoided altogether.

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## MEDIAEVAL "LEPROSY"

In the Section of the History of Medicine of the Royal Society of Medicine on Feb. 2, with Dr. ASHWORTH UNDERWOOD in the chair, an address was given by Lieutenant-General Sir WILLIAM MACARTHUR on "Mediaeval 'Leprosy' in the British Isles." At the same meeting an exhibit of engravings and old books and other objects of interest relating to leprosy was provided by the Wellcome Historical Museum.

Sir William MacArthur said that it was very difficult to determine the extent of leprosy in these islands in the past. That it existed was beyond question. But many people assumed that the word "leprosy" in the past had its present meaning, whereas actually it had a multiplicity of meanings. In the first place, it was used in the strict sense of the disease leprosy as now understood. The writings of some fourteenth-century physicians included accounts of leprosy in its more characteristic forms, along with a good deal else that was difficult of interpretation. Unfortunately the word "lepra" became a classical medical term, and by the suggestion of the word itself, whose basic meaning in the Aryan languages was "something that peels off," a host of skin conditions associated with scales and scabs which had nothing whatever to do with leprosy were regarded as manifestations of that disease. The use of the plural "leprosies" by writers as far apart as Pliny and Lord Macaulay showed that they at least were aware of the comprehensiveness of the term.

The word "leprosy" was used also for conditions which were not believed to be leprosy even in the elastic sense of the word. It was used for diseases of animals and plants. "Mist and rain make the grain leprous." It was also used to describe miserable and pitiable states which had no connexion with any disease. The word "stricken" in *Isaiah* liii. 4 was translated by St. Jerome in the Vulgate as "leprosus," and John Wycliffe a thousand years later used "leprous" in the same passage; yet if St. Jerome and Wycliffe were alive to-day they would agree—perhaps the only point on which they would be in agreement—that the word "stricken" in the Authorized Version expressed their meaning exactly. To make confusion worse confounded the term "leprosy" was extended out of all measure by ecclesiastical example and precept. The patriarch Job was proclaimed a leper because of his "boils." The condition of the beggar in the parable was similarly diagnosed. "Lazarus," which simply meant "without help," became synonymous with the imaginary disease, and survives to-day in "lazar" and "lazaret."

### Leper Houses

The leper houses were mostly small institutions, each with its own set of rules. They brought relief to many miserable creatures, among whom there was no doubt a proportion of genuine lepers. In a recently published volume the number of leper houses in the British Isles was given as 324, of which

283 were in England. Yet some of these leper houses were mentioned once only, in someone's will, and nothing whatever was known about the institution, and there was nothing to show what the testator meant. Others were called leper houses merely because of a statement to that effect made by some visiting antiquary and based solely on local tradition. Others were nothing more than almshouses. Houses established specifically for lepers were often transferred to some other purpose. Among others he mentioned St. James's, Canterbury, founded for 25 women lepers; the King's Commissioners in 1341 found it occupied by 25 women "glowing with health." Romney leper house was described in 1363 as "derelict and totally desolate" because no lepers could be found to occupy it; it was repaired and used otherwise.

Armagh was best known to students of medical history as the site of the famour leper hospitals said to have been sacked in 869 by the Danes. He had examined all the Gaelic texts in which this destruction of Armagh by the Danes was recorded, and there was no mention of leper hospitals in any of them. Sir William MacArthur explained that these annals were translated into Latin in the eighteenth century by Charles O'Conor, a man of wide learning but not a good Celtic scholar. O'Conor misunderstood the original text and translated an old Gaelic word for oratories by *nosocomia* (hospitals). A later writer, one Belcher, committed a further error and glossed O'Conor's *nosocomia* by "leper hospitals." Thus the story began. The "leper hospitals of Armagh" were never anything more than fantasies of the imagination.

### Robert the Bruce

Sir William MacArthur went on to tell the story of Robert the Bruce, who was commonly reported to have died of leprosy in 1329.[1] On what evidence had Robert the Bruce been condemned for 600 years as a leper? There was no mention of leprosy by any contemporary Scottish historical writer. The story began on the English side of the Border and was recorded in two connexions only, first to explain Bruce's strange action in appointing Moray and Douglas to lead the Scottish army against the English in 1327, and secondly to account for Bruce's death about two years later. The earliest mention of leprosy occurred in *The Chronicon de Lanercost*, the work of an unknown Franciscan monk of Carlisle. It explained that Bruce appointed Moray and Douglas to command the campaign "because he had become a leper." But Bruce was absent from this campaign not because of leprosy or any other disease but because he had gone on a secret mission to Ireland. Later he returned and carried fire and sword all over the North of England. Bruce's health was failing, but there was no question of his retirement, nor did anyone shun his company. Three weeks before his death he was carrying out State business in public, and when the end was near all his lords were summoned and, surrounded by them, he closed his days in gracious state, to use the words of a Scottish chronicler.

Bruce's long feud with the Vatican was interesting in this connexion. Bruce and all his adherents were excommunicated by Clement V. Two cardinal legates were sent by a later Pope, and when they attempted over Bruce's head to publish a bull proclaiming a truce their messenger, with Bruce's concurrence, was stripped naked and the Pope's bull torn in pieces. Bruce was denounced thrice daily in every Mass, excommunicated, and put under interdict, but he continued to defy the Pope. His enemies called him by every ill name, but "leper" did not appear among the epithets. Had Bruce suffered from leprosy or any disease that could have been termed leprosy, would not this "judgment" have been proclaimed in every church in Christendom?

It was often said that leprosy disappeared from England owing to the strict isolation that was enforced. But there was little evidence of any form of strict isolation. The custom of regarding the leper as one dead and deprived of civil rights was never followed in England. There was no contemporary evidence that the so-called "leper windows" in churches had anything to do with lepers. "Leper laws" proved to be extracts from the rules of one or other of the leper houses, having no authority outside the walls of the institution. Lepers had a legal right to beg. In some places they could help themselves to food exposed for sale in the market-place. At Shrewsbury they could take a handful of grain from every sack offered for sale. If a man did not mind being called a leper his livelihood was assured.

He was not arguing that there were no lepers, only that no statement implying the disease as now understood should be accepted unless clinical data were given to point the diagnosis. In general the diagnosis was made by monks, friars, or parish officials. If such functionaries carried out a "leper hunt" in London hospitals to-day they would not come away empty-handed; they would find chronic and intractable skin diseases, ulcerations, and deformities which would fit in with their conception of leprosy.

Sir LEONARD ROGERS, Sir PHILIP MANSON-BAHR, Sir ARTHUR MACNALTY, and others participated in a brief discussion.

[1] The current *Encyclopaedia Britannica* states: "Bruce died of leprosy."

# Correspondence

### Whither Tuberculosis?

SIR,—May I reply shortly to this correspondence and comment on Dr. C. O. Stallybrass's paper, "Tuberculosis at the Crossroads" (Feb. 5, p. 207), and the leading article in the same issue (p. 226)? First a slight emendation as to the fate of decisions of the new Standing Committee on Tuberculosis. These are to go to the Minister and to the Central Health Services Council—presumably as the Minister directs—and not, as could be implied in my letter (Dec. 25, 1948, p. 1118), only to the Central Health Services Council.

Dr. S. Vere Pearson (Jan. 22, p. 152) writes he does not understand the sentence, "Tuberculosis, environmental and clinical, now merges into a general medical directive." The delightful rural position of independent Mundesley in a far corner of a minor county makes the change from county council and county borough administration to joint hospital boards centred in university towns of no great moment. Not so, however, for the vast majority of tuberculosis workers. They now find "directives" not from a public health committee but from academically minded regional hospital boards.

My fellow-Liverpudlian's most valuable paper, "Tuberculosis at the Crossroads," needs no embellishment. His conclusions are sure and sound, and support the foundation of the old Lancashire scheme summed up in the words, "Find, isolate, educate, treat, and rehabilitate the adult positive case." Of course everything depends on how these mere words are translated into practical measures. Thus "find" had to cover teamwork, beds for senior T.O.s, *x*-ray plants, whole-time capable health visitors, so that out of all these things there came, most important of all, cordial co-operation from all the general practitioners. Is it at last seen how absurd was the development of the *part-time* tuberculosis officer?

I agree whole-heartedly with Dr. Stallybrass's conclusions as to massive infections in the first page of his paper and would draw special attention to his paragraph on the segregation of infective cases. He does not refer to *The Fate of Young Children in Tuberculous Households*.[1] In 1929 the Joint Tuberculosis Council published this report of an inquiry conducted by Lancashire county borough and county council tuberculosis officers. Their third conclusion was to the effect that "the death rate from non-pulmonary tuberculosis of children exposed to risk in tuberculous households from an adult with positive sputum . . . was:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| nine | times | greater | than | the | control | in | age | group | 0–1 |
| fourteen | " | " | " | " | " | " | " | " | 1–2 |
| nineteen | " | " | " | " | " | " | " | " | 2–5 |

The deaths were due mainly to tuberculous meningitis."

Your leading article, "Co-ordination of the Tuberculosis Services" (Feb. 5, p. 226), sums up well and truly the present position. But what are we to do? How can we maintain the essential integration of prevention and treatment now that the National Health Act has separated them? Who will put Humpty Dumpty together again?

The Leeds Region is, I understand, trying a way to avoid the fatal divorce. Two important unifying principles are at work there. First, the chairman of the tuberculosis advisory panel of the region is the most *un*-specialized tuberculosis worker possible—namely, a T.O. holding a university teaching post for medical students and having experience and interest in prevention. Secondly, the staff of the region are under one paymaster (i.e., no joint appointments and two masters), and the field of work given to each member of the region's staff, covering diagnosis, treatment, rehabilitation, and particularly prevention, is apportioned by the tuberculosis advisory panel. —I am, etc.,

Church Stretton, Salop. G. LISSANT COX.

REFERENCE

1 Published by C. Tinling and Co., Ltd., Liverpool.

## Co-ordination of the Tuberculosis Services

SIR,—Your leading article (Feb. 5, p. 226) on the tuberculosis service is timely. As a social disease tuberculosis is responsible for a greater loss of man-power than any other pathological condition, and during the Hitler war for every two men from this country who were killed in action a third person died at home of this disease. Surely then the control of such a disease warrants the prime attention of those responsible for organizing the future health services of this country. Yet, as Dr. G. Lissant Cox has pointed out (Dec. 25, 1948, p. 1118), the Central Health Services Council has on it no tuberculosis specialist. Perhaps this would be excusable if it were that we knew so little about the disease that no special measures for its control were practicable, but nearly thirty years ago Sir Pendrell Varrier-Jones declared that there was no disease capable more easily of prevention than tuberculosis, and it is half a century since King Edward VII asked the famous question, "If preventable, why not prevented?"; and since then considerable progress has been made towards that goal.

It has been put forward that tuberculosis officers are wanting to treat patients. It should not be forgotten that most tuberculosis officers in this country to-day are probably seeing from 25–50% more new patients each week, keeping under surveillance many more minimal cases, and maintaining far more collapse measures than ever they were before the war. Why then should they be seeking to extend their activities even further? Surely because they are more acutely aware of waiting-list problems than any other worker in the tuberculosis field, and some of us wonder whether valuable sanatorium beds really need to be occupied for such long periods by individual patients when, with modern knowledge widening rapidly the range of treatable cases, it is becoming essential to treat more and more patients somewhere.

Few would dispute the dictum of Sir Robert Philip which you quote, that the centre of tuberculosis control must be in the old dispensary, but it must not be overlooked that modern developments require much greater skill and knowledge from the tuberculosis officer than formerly. No longer does it suffice to diagnose advanced phthisis with the stethoscope and microscope; he must be a competent radiologist as well as clinician, and responsible for diagnosing all forms of chest disease, not merely phthisis. No longer does after-care comprise recommending extra nourishment for the poor and needy; the chest physician must be competent to maintain a delicate pneumothorax (or two of them) for several years, and he must be acquainted with industrial and social conditions, enabling him to advise the D.R.O. in the important field of rehabilitation. And it is to be hoped that some day B.C.G. will extend his field yet further.

If progress is to continue toward the abolition of tuberculosis (which was the aim of the old Welsh National Memorial Association), then the status and remuneration of the new "chest physician" must be such as will attract men competent to prosecute such a campaign vigorously, regardless whether they attack the disease inside or outside institutions or whether their prime interest is in differential diagnosis, collapse therapy, or social medicine. There is ample room for all. But this alone will not suffice: there must be good generalship, and at least at regional level, if not national, clear co-ordination of all aspects of tuberculosis control is essential.—I am, etc.,

Reading. W. H. TATTERSALL.

## Mantoux-negative Nurses

SIR,—In his valuable paper, "Tuberculosis at the Crossroads" (Feb. 5, p. 207), Dr. C. O. Stallybrass states, "I do not think any responsible person in charge of a hospital admitting patients suffering from tuberculosis can be happy about present conditions under which Mantoux-negative nurses . . . come into contact with infectious cases."

You have from time to time published letters from me about risks to Mantoux-negative nurses, but as the last appeared over four years ago, and as such staff are still employed in nursing the tuberculous, I should like the opportunity of briefly re-expressing these views. They are based on a not inconsiderable experience with Mantoux-negative student nurses at this hospital and on the evidence in the world literature, especially that from Scandinavia, which provides overwhelming evidence that in a comparable environment Mantoux-negative persons have a far higher morbidity from tuberculosis than Mantoux-positives.

A few years ago the L.C.C. became impressed with these facts and arranged that no Mantoux-negative nurses should work in the tuberculosis wards of their general hospitals or in their tuberculosis hospitals, but they were not excluded from their sanatoria. Tuberculosis institutions in this country would appear to be divisible as regards this problem into three categories: (1) There are many in which nurses are not Mantoux-tested and "ignorance is bliss." (2) Institutions in which nurses are Mantoux-tested and carefully followed up by regular *x*-ray and routine examination, as recommended in the Joint Tuberculosis Council report. This is good so far as it goes, but this procedure, dictated as it is by the pressing need for nurses, does not protect them from infection. (3) A few institutions do not employ Mantoux-negative nurses in their wards.

An attempt has been made to differentiate between tuberculosis hospitals and sanatoria, chiefly by medical superintendents of the latter, in regard to the risks of infection in both. Apart from the fact that this distinction has become less and less obvious with the increasing use of collapse therapy and chemotherapy in all institutions, it must surely be recognized that wherever positive-sputum cases are treated the risk of infection is present.

When B.C.G. is available in this country, as it shortly will be, it is to be hoped that there will be a definite directive both to general hospitals and to all institutions nursing positive-sputum cases, to urge this protective vaccination on Mantoux-negative nurses.—I am, etc.,

Colindale Hospital, London, N.W.9. W. E. SNELL.

## Tuberculous Infection of Infants

SIR,—In Dr. C. O. Stallybrass's article, "Tuberculosis at the Crossroads" (Feb. 5, p. 207), the work of the maternity unit at Black Notley Hospital is mentioned (p. 211), but the presentation of figures of infant morbidity may give rise to an erroneous impression.

It is true that in an early follow-up of infants the morbidity figures of those born to mothers remaining sputum-positive was 4 out of 11. We must point out that these figures relate to those mothers who remained sputum-positive after discharge and no infants were infected while in the unit. It is true also that 2 of these 4 died, but the other 2 developed only mild glandular infections and recovered. A follow-up, shortly to be published by one of us (M.C.W.), of a large series of infants and children treated at Black Notley for tuberculous lymphadenitis confirmed that this is a benign form of tuberculosis, and that a primary infection occurring in a child born of a tuberculous mother is not necessarily of evil consequence.

The series quoted was a small one, and an investigation of the larger numbers now available is proposed, but we have no reason to believe that the incidence of serious tuberculous infection in infants born in the unit is likely to be high. Dr. Stallybrass must be unaware that, though the conditions in the maternity unit are excellent, the infants reported on were in many cases discharged to the Greater London area under war-time conditions.

At the same time, although we feel that the dangers of familial infection of infants can easily be exaggerated, we would like to agree most whole-heartedly with Dr. Stallybrass that vaccination with B.C.G. of infants exposed to contact infection

desirable as a promising means of reducing the incidence of tuberculous disease, however small it may be without that protection.—We are, etc.,

M. C. WILKINSON.
RAYMOND C. COHEN.

Braintree, Essex.

## Spinal Anaesthesia for Caesarean Section

SIR,—It should be a *sine qua non* that those who desire to criticize any procedure, whether medical or surgical, should be sure of their facts and up-to-date in their knowledge of the relevant literature, and that their strictures should be supported by personal experience. The use of spinal anaesthesia for caesarean section has been the subject of far too much ill-informed criticism in the past.

Among the severest critics of spinal anaesthesia in pregnancy have been the late Dr. Joseph B. DeLee, founder and for many years head of the Chicago Lying-in Hospital, and Dr. J. P. Greenhill, DeLee's successor at the same hospital. The well-known *Year-Book of Obstetrics and Gynecology*, in which much of the criticism has appeared, has been edited by DeLee and Greenhill.

The main object of my letter is to place on record what I consider to be one of the most significant milestones in the course of the controversy about spinal anaesthesia in pregnancy. In October, 1948, I received a letter from Dr. George J. Andros, assistant professor of obstetrics in the Chicago Lying-in Hospital, which I think should be published in full.

"I have been intending to write you for a long time to commend you on your splendid work in championing the cause of spinal anaesthesia in obstetrics. Your efforts have made a great impression upon those of us who seek to further the use of this method in America. You might be interested to know that at the present time in the Chicago Lying-in Hospital approximately 85% of all caesarean sections are done under spinal anaesthesia (primarily continuous spinal) and over 50% of the vaginal deliveries are carried out under spinal (saddle-block) anaesthesia. You probably realize that this is quite a departure from the teachings of our founder, Dr. Joseph B. DeLee.

"My immediate purpose in writing you at this time is to ask whether or not it would be possible for me to obtain from you a copy of the entire text of the "Discussion on Anaesthesia for Caesarean Section" appearing in the *Proceedings of the Royal Society of Medicine*, August, 1947. If you do not have this material on hand, can you direct me to the proper source? I wish to use the material presented in this discussion as reference for publications and lectures on spinal anaesthesia in obstetrics.

"Incidentally, we have done approximately 35 caesarean sections with 'heavy nupercaine' in doses of 2.5 mg. and 3.75 mg."

The significance of this letter, coming as it does from the assistant professor in Dr. Greenhill's own hospital, will not, I hope, be overlooked by those (and there are many) who have in the past criticized the use of spinal anaesthesia in obstetrics and more especially for caesarean section.

There is not the slightest doubt that spinal anaesthesia in some form or other (single dosage as used by me and many others, or continuous dosage as indicated by Dr. Andros) has established itself as a safe anaesthetic "for suitable cases" in obstetrics. There are of course certain contraindications, such as low blood pressure, shock, recent severe blood loss, and severe anaemia, to which I have never failed to draw attention in the various articles which I have written on the subject. But in many instances these contraindications can be eliminated and their dangers removed by blood transfusion and the use of hypertensive drugs, of which the best is undoubtedly *d*-N-methylamphetamine hydrochloride, and oxygen.

Finally, may I express the hope that those who have no personal experience will withhold criticism until they have taken the trouble to acquire the technique and tried it out for themselves, with, of course, the proper precautions?—I am, etc.,

Croydon. RUFUS C. THOMAS.

## Classical Caesarean Section

SIR,—In my condemnation of classical caesarean section I have been accused of using harsh words. I can only say they were deliberately chosen: only so could I hope to influence those who frequently practise" the operation. What is grievous, however, is that some of my colleagues have misread my letter (Oct. 16, 1948, p. 722) and so have objected to opinions which I never stated. Just as for any operation, so for the classical caesarean section there are indications, some definite, some debatable; and I should now like to formulate these as my main contribution to the controversy and at the same time to comment on some interesting points which have been raised.

*Definite indications for upper-segment caesarean section*

1. The presence of a large cervical fibroid can obliterate the lower part of the cavity of the uterus to such an extent that it may be difficult to find the cavity, let alone deliver the foetus, if the uterine incision is placed low. In such cases an upper-segment incision *must* be performed.

2. Shoulder presentation in which the liquor has drained away and the uterus is tightly moulded round the foetus: in such a case a low vertical incision, which can be enlarged upwards if necessary, should be employed. This is the type of case described by Mr. Percy Malpas (Jan. 22, p. 156). In the most extreme example of the condition that I have seen the foetal elbow had prolapsed into the vagina through a cervix half dilated, and there was such a marked contraction ring round the arm and forearm that they were grooved by it: replacement of the foetus was quite impossible even under general anaesthesia. To deliver the child I used a vertical uterine incision, half in the lower and half in the upper segment.

3. Where there is a contraction ring requiring incision.

4. In certain dwarfs with little room between costal margin and symphysis pubis, and where the uterus fills the whole abdomen: access to the lower segment may then be very difficult.

*Other conditions for which classical caesarean section may be indicated*

1. When the lower segment is so narrow and ill-formed that there is not room in it for an incision large enough to deliver the child through—e.g., transverse lie in a uterus bicornis unicollis in a primigravid patient. In such cases a low vertical incision should be employed: this may be made partly in the lower segment if the bladder is pushed down first.

2. In certain cases of fibroids lying in the upper segment when they are to be removed at the time of the caesarean section.

3. Cases in which as a result of previous operations there are extensive adhesions between uterus and abdominal wall. In such cases the uterus should be opened in some readily accessible place. Caesarean section following previous ventrifixation of the uterus may come in this category. I have only operated on one such case, and rightly or wrongly freed the uterus from the abdominal wall and performed a lower-segment caesarean operation.

4. In cases where there are large blood vessels coursing across the lower segment and when the surgeon is inexperienced or anxious about the outcome of a low incision, an upper-segment incision is probably the lesser of evils. This is the type of case my namesake, Mr. P. M. G. Russell (Oct. 30, 1948, p. 798), refers to. In my experience these blood vessels do not always cause as much trouble as one expects. A tip of real value if bleeding threatens to be troublesome is to complete the incision by tearing rather than by cutting; this puts the edges of the uterine incision on the stretch and so closes the opened sinuses until they can be deliberately grasped with Green-Armytage or other forceps.

5. I am reluctant to accept Professor S. J. Cameron's claim (Nov. 27, 1948, p. 956) that classical caesarean section should be chosen "when rapid delivery is indicated." Emphasis on speed in midwifery is not without its dangers—to foetus as well as to mother—so I should prefer the advice "hurry slowly"; perhaps then the lower-segment caesarean section will be judged quick enough.

I agree whole-heartedly with Professor W. C. W. Nixon (Oct. 30, 1948, p. 798) in his plea for the low incision in abdominal hysterotomy; I have used this approach for some years and am sure it is generally preferable to the more usual high incision. A possible exception is the woman who is being operated on under local anaesthesia; access to the lower segment is then not easy.

Dr. Guy Roworth (Oct. 30, 1948, p. 798) suggests that in certain cases the vertical incision half in lower segment and half in upper segment is superior to the transverse incision in lower segment. I do not have enough knowledge of the late effects of what might be called the "half-and-half" incision to make any comments on this comparison. I hope others will feel able to give their experience on this subject.—I am, etc.,

Manchester. C. SCOTT RUSSELL.

SIR,—I was interested to read Mr. Percy Malpas's letter on caesarean section (Jan. 22, p. 156) and the difficulties that he had encountered in delivering an impacted shoulder presentation by the lower-segment route. I have personally encountered five cases in which I had difficulties similar to those described by Mr. Malpas. Three of these were cases of impacted shoulder presentation and the other two were vertex presentations associated with severe kypho-scoliosis. In one

of the latter cases the patient was a severely dwarfed hunchback, and in the other the patient herself had been born with a spina bifida from which she had survived but which had left a severe pelvic deformity. In both of the latter cases pelvic measurements taken by *x*-ray pelvimetry were extremely small.

In the case of the shoulder presentations I encountered exactly the same difficulty as Mr. Malpas describes—namely, that it was nearly impossible to bring the babies' legs down the lower-segment incision without tremendous strain on both the foetal trunk and the uterine muscle. In the other two cases I found that the pelvic deformity was such that it was extremely difficult both to elevate the foetal head and at the same time draw it anteriorly into the uterine incision.

In each one of these five cases I found that the solution was to convert the transverse incision in the lower uterine segment into a T-shaped incision. This was carried out simply by incising the lowest part of the upper segment vertically from the middle of the transverse lower-uterine-segment incision. The length of this second incision was in each case about 3 in. (7.5 cm.), but I found that on completing the operation, and with full retraction of the uterus, this 3-in. incision now measured only about 1 in. (2.5 cm.). All that was then required was the insertion of one or two stitches into the vertical incision, followed by closure of the transverse lower-segment incision in the usual manner. It was quite simple to overlap both incisions with the reflection of peritoneum which is raised as a routine in performing lower-segment caesarean section. The resulting convalescence was excellent in all of these patients.—I am, etc.,

London, W.1. D. G. WILSON CLYNE.

### Anaesthesia in Ludwig's Angina

SIR,—Dr. V. Torry Baxter, referring to my letter (Jan. 1, p. 31), has written (Jan. 22, p. 153) an able account of the considerations involved in anaesthetizing cases of this disease in which there is severe obstruction to breathing, but he goes on to state that to induce unconsciousness as a preliminary to surgical intervention in cases of Ludwig's angina is to court disaster. Whilst agreeing with this statement when it is applied to cases with severe respiratory obstruction, I am convinced it is not true of all cases.

By no means all cases of Ludwig's angina are complicated by respiratory obstruction; indeed, most of the cases that come to operation are breathing normally, while some are only obstructed to a minor degree. If Dr. Baxter's statement is true, disaster has for many years been courted with the aid of chloroform and, more recently, cyclopropane, with what can only be described as a very indifferent response. If, however, there is anyone who would wish to see this courtship fairly crowned with success, let him try induction with "pentothal" on a few of these cases. He will not have to wait long before his wish is abundantly fulfilled.

Mr. Eric K. Gardner (Jan. 22, p. 153) raises a point which will be generally agreed. Junior residents should not be expected to undertake this responsibility. If they were aware of the dangers involved they would doubtless more often enlist the help of their seniors. But as long as intravenous anaesthesia continues to be recommended for this operation in the latest surgical textbooks one can hardly blame them for administering it, and can only sympathize with them and the relatives when the results are disastrous.—I am, etc.,

Sutton, Surrey. JOHN H. WILLIS.

### Bronchography without Surface Anaesthesia

SIR,—Anaesthesia for bronchoscopy and gastroscopy is undoubtedly necessary, and it may therefore be essential to use one of the more potent but toxic surface anaesthetics in cases requiring these procedures. However, Mr. C. A. Jackson in his article on amethocaine hydrochloride (Jan. 15, p. 99) and, more especially, Dr. C. Elaine Field in her letter (Feb. 5, p. 236) advocate the use of amethocaine hydrochloride in bronchography.

When bronchography is done by the cricothyroid-membrane route it has been common practice to inject some potentially dangerous surface anaesthetic through the needle into the trachea before the contrast oil is instilled. In an attempt to avoid the use of any member of this group of drugs, I and others have done many successful bronchographies in adu without the use of any intratracheal surface anaesthesia. Cou ing and discomfort are no more than with anaesthesia, wh must always be very limited in view of the small bulk of fl used. Procaine is, of course, used to infiltrate the skin and s cutaneous tissues over the membrane before the introduct of the needle.

I would therefore urge the abandonment of the use of a of the surface anaesthetics in bronchography. Let it be reme bered that over a thousand years ago, in the *Guide to Physici* by Isaac Judaeus, appeared the aphorism, "Treating the sick like boring holes in pearls, and the physician must act wi caution lest he destroy the pearl committed to his charge." I am, etc.,

Liverpool. EWAN F. B. CADMAN.

### Proguanil and Blackwater Fever

SIR,—In view of the recent letters on proguanil ("paludrine") I thought the following case might be of interest.

A young European was brought to hospital who had been comat for 18 hours; blackwater fever was diagnosed, but despite treatm he died within 12 hours. This patient had been in the country so 15 months, living most of that time in the bush in a highly malarie district. For the whole period he took one tablet of proguanil ev alternate day regularly. He had also been in Egypt for a short perio before coming to Uganda. He had never suffered from malaria n from fever of unknown origin, and he had never taken quinine a any time until this illness.

Before coming to hospital he had received treatment for clini malaria in his bungalow—quinine bihydrochloride 30 gr. (2 g.) o three successive days. He was admitted to hospital on the fourth d of the disease.

From experience we have found that anything less than o tablet of proguanil a day will not suppress malaria. Th have been several cases where the person was taking one tab on alternate days regularly, yet they developed a typical attac of malaria with a positive blood slide (subtertian). It is pr sumed that the case reported above was in fact blackwater fe from the onset; if so, was it precipitated perhaps by the a that proguanil was acting as an insufficient suppressive on t malarial parasites?

I am indebted to the D.M.S., Uganda, for permission to publi this report.

—I am, etc.,

Mbale, Uganda. A. M. BEST.

### Strong Corsets and Pelvic Congestion

SIR,—During the past two years I have observed a group o 32 cases of women who have reported either at my consulti rooms or the out-patient department with the symptoms o pelvic congestion. These took the form of backache, bou of urinary frequency, fullness in the rectum, iliac-fossa achin and general pelvic dragging. All these symptoms might appe together or singly, or in one or other combination.

The ages of these patients ranged from 22 to 42 yea A feature common to them all was that they had obe abdominal walls with very firm fat. Cystoscopy revealed on several occasions that the vessels, especially the veins of t trigone, were obviously more congested than normal (this w during the period of urinary frequency). When iliac-fos aching appeared to be confined to one side it was mo frequently noticeable on the right than the left side.

The second noticeable feature was that the patients' sym toms in this group dated from the acquisition of good, stro surgical corsets. Previous to the use of these strong, w fitting corsets, which no doubt did mould the patient's fig in an approved fashion, this group had used what they c sidered loose utility supports. It was noticeable that this fi fat, presumably due to a high carbohydrate diet, had be deposited freely in the abdomen because there was no r pressure on this area to induce it to be deposited elsewh (shoulders, breasts, thighs). I assumed that these strong cors were compressing this firm fat against the inferior vena ca and impeding the venous return from the lower limbs, w stagnation in the pelvic veins or right ovarian veins. I ask these patients to either dispense with corsets for a month wear them loosely. The improvement in the patients' sympto

was definitely established; by wearing their corsets more loosely applied thereafter these patients very definitely improved or were free of symptoms without further therapy.

There are two other groups of cases which fit into a similar picture but of which I have not had sufficient cases with such definite reference in order to link them with the above. The first group consists of young women with long lower limbs beginning to wear a high-type girdle. These develop backache or right iliac-fossa aching, presumably due to abdominal constriction at the umbilical level. It would seem that by the time the blood from the lower limbs reaches the pelvis the *vis a tergo* is sufficiently low to permit stagnation in the pelvic or ovarian vessels (10 cases). The second group were elderly women who began to develop a progressively worse prolapse, also suggestively dated from the acquisition of strong corsets and abdominal compression (9 cases).

I would advise that corset manufacturers should warn their fitters that where the patient has not been accustomed to strong abdominal support corset fittings should be so applied that the abdominal compression can be increased gradually over a period of months, so as to obviate this syndrome developing.—I am, etc.,

Derby. LINDSAY O. WATT.

### Prescription of Barbiturates

SIR,—I was greatly interested in Dr. Nathan Finn's letter (Jan. 29, p. 195) regarding the prescription of barbiturates, as this problem has occupied my mind for some time. The idea of combining phenobarbitone with an effective emetic in the same tablet presents itself quite obviously, but the solution is not as simple as it appears to be.

From theoretical and practical considerations we have to include the optimum emetic dose (e.g., pulv. ipecac., which is the only drug suitable for the purpose) into the minimum lethal dose of phenobarbitone. The M.L.D. of phenobarbitone is 3–6 gr. (0.32–0.4 g.),[1] and the emetic dose of pulv. ipecac. is 15–20 gr. (1–1.3 g.). This means that every ½-gr. (32 mg.) tablet of phenobarbitone will contain nearly the maximum expectorant dose of pulv. ipecac. with all its irritant properties—a quite undesirable feature.

Secondly, it is most important to remember that phenobarbitone, being absorbed simultaneously with pulv. ipecac. (probably at an even faster rate), will neutralize the vomiting effect of the latter by virtue of its own sedative properties. In practice the patient will be dead before he is "due" to vomit.

I see the solution of this important problem not in the combination of barbiturates with emetics but in avoiding prescribing these drugs to a phenobarbitone-conscious public and in the choice of other sedatives wherever possible. The open-chain ureides, like carbromal, etc., are fairly safe and generally not much less effective alternatives.—I am, etc.,

London, N.W.2. H. H. MARGULIES.

REFERENCE

[1] Mutch, N., *British Medical Journal*, 1934, **1**, 319.

### Cogs in a Machine

SIR,—With reference to the "health records" for this country in 1948, I should like to point out that it is absurd for us to congratulate ourselves upon the better health of the nation when arguing only from those figures which relate to physical well-being. There are no statistics available to give an adequate picture of the nation's health over the whole field—in, that is to say, its physical, mental, and psychological condition. Yet the human being is a threefold entity (body, mind, and spirit), each part of whose nature is intimately related to the other.

Most medical practitioners are becoming uncomfortably aware of the increasingly high incidence of psychological and psychosomatic conditions. Not only are positive personality disorders on the increase; very many people are exhibiting symptoms whose ultimate origin is psychological. Even where this is not the case, increasing numbers of people are becoming subject to irritability, disproportionate anxiety, and apparently unreasonable feelings of insecurity, which, while realizing their insufficient foundation, they find they cannot control.

To no small degree the reason is to be found in our machine civilization, which turns the individual into a cog in the industrial or military machine. This procrustean bed, to which each one of us in our proud individuality has to be lopped, is proving very uneasy. The natural revenge is an increasing number of cases of derangement of the nervous system.

In this country, even to-day, there is a tendency to confuse the treatment of the disordered psyche with the treatment of the disordered brain. For the sake of the millions to whom the pressures of modern life have brought abnormal stress this attitude should be modified. The effects of machine civilization should be investigated and the conditions of life and work adjusted to human needs. This is all the more necessary *because* in the field of physical health our average of attainment is rising. Personality disorders and psychic conflicts are handed down from one generation to the next, not according to laws of heredity as in the physical sense, but according to laws of stress and reaction—maladjusted parents producing maladjusted children.

There is in English public life an extraordinary tendency to close the eyes to the fact that human health and human happiness cannot be attained by concentrating only upon one aspect of the human being. Although more sensible diet and more advanced discoveries in the realm of therapeutics have helped to improve our general level of physical health, that still gives us only one part of the picture. Moreover, if the mental and psychological well-being of the people is overlooked, it cannot be long before their physical health suffers too.—I am, etc.,

London, W.1. EUSTACE CHESSER.

### Malignant Tumour of the Small Intestine

SIR,—While awaiting a proof of the report on jejunal carcinoma (Feb. 12, p. 283) I wanted to add a few rather vital words to one sentence. Where it says in the penultimate paragraph "ulcer of finger-tip size in the lower curve of the stomach," please add, "No abnormality was noted in the jejunum."—I am, etc.,

Bristol. A. WILFRID ADAMS.

## POINTS FROM LETTERS

### Dental Caries

Dr. WILLIAM WALLACE (Glasgow) writes: A novel but neglected solution of the dental caries problem may be referred to in the *Transactions of the Royal Medico-chirurgical Society of Glasgow* (1933, **27**, 217). I might now allude to the study of the comparative rate of the incidence of dental caries in the teeth of three groups of five-year-old children by Lady Mellanby and her colleagues (May 31, 1947, p. 751); they admit that they have failed to discover the *direct* or immediate excitant of this disease and also that there is "an anomalous" freedom from caries in teeth of defective structure in institutional children. They now wish to know why and how this is so, and state: "If there are secrets yet to be discovered which can explain these results, as there almost certainly are, every effort should be made to reveal them." This disease is virtually pandemic. It is what may be called a privitive one—i.e., one due to the absence of something the teeth cannot do without (namely, daily use), lest they contract a microbic rust—when from nausea or loss of appetite mastication becomes interrupted for a day or more, during which time the ameloclast seizes the opportunity of affixing itself in an interstice between two teeth or a fissure in a premolar or molar. Anticipation of decay in the second molars is the key to the prevention of dental caries.

### The Crisis in Lobar Pneumonia

Dr. L. R. HOLT (Stamford, Lincs) writes: The history of the following case of lobar pneumonia, which had no treatment with the "sulpha" drugs, seems to be worthy of record. I was recently called out to an ex-R.A.F. camp near here, which is now occupied by "squatters," to see a girl aged 6½ years about whom the mother gave the following story. Eight days prior to my visit the little girl had been seized with sudden pain in the left chest, accompanied by high fever, dry cough, and vomiting. As it was a Sunday and the parents did not wish to disturb the doctor on the Sabbath (how rare in these days of the new N.H.S.) they deferred until the next day. But she seemed a little better on the Monday, and so they hung on, day after day, until on the evening of the seventh day the child became delirious, sweated profusely, and was apparently exhausted. I was summoned for the first time on the following morning, and on examining the child found signs of consolidation of the lower lobe of the left lung consistent with lobar pneumonia: the temperature was 98.6° F. (37° C.), respiratory rate 40, and the pulse rate 120. Employing conservative measures, she made an uninterrupted recovery. How many of the younger generation of doctors have witnessed the "crisis" of lobar pneumonia, which this girl undoubtedly exhibited on the evening prior to my first visit? It must be a rare clinical experience in these days of penicillin and the "sulpha" drugs.

# Obituary

## H. D. HALDIN-DAVIS, D.M., F.R.C.P., F.R.C.S.

The death of Dr. Harold David Haldin-Davis, at Forest Row, Sussex, on Feb. 2, so closely following that of Dr. J. H. Sequeira, has robbed British dermatology of yet another outstanding figure. Dr. Haldin-Davis was 67, and for the past three years had borne with great fortitude the painful complications of a disease which he well knew to be incurable and ultimately fatal.

Educated at Charterhouse, he won a scholarship at Balliol College, Oxford, and took his B.A. with first-class honours in physiology. At St. Bartholomew's Hospital his preference seems to have been surgical at first, for in 1908, three years after graduating B.M., B.Ch., he added the F.R.C.S. to his other qualifications. Shortly afterwards he passed the examination for the M.R.C.P. About this time, too, under the tutelage of Dr. Adamson, one of the foremost dermatologists of the day, he began to take an interest in dermatology, and made it his special study. He read extensively, and with a rare memory for facts and figures would frequently flavour both his lectures and writings with classical and literary quotations. He passed without apparent effort all the examinations he ever sat for. In 1925 he proceeded M.D., and he was elected F.R.C.P. in 1931.

Haldin-Davis dedicated most of his professional life to the dermatological department of the Royal Free Hospital, where his fluent, witty, and discursive lectures won him a host of admirers and friends. He was equally popular at the Blackfriars Skin Hospital, and his influence there and the high standards he set enlarged its field of work and attracted many postgraduate students. But these activities and an increasing private practice did not satisfy him. He became the visiting dermatologist to the Children's Hospital at Paddington Green, and for many years he supervised the Willesden clinic for the treatment of ringworm of the scalp by *x* rays. This and other pioneer work was undertaken before the outbreak of the 1914–18 war. As a Territorial officer he served in the R.A.M.C. and saw active service in Palestine. In 1918 he took up his ordinary routine again and assumed an additional appointment as specialist in dermatology to the Ministry of Pensions.

Although he worked so hard, "Hal," as he was known to his friends, found time for social occasions, and his hospitality, ably furthered by his wife, both in town and country, became proverbial. But still it was not enough. He assumed civic duties, became a councillor, and was well in the running for the mayoralty of St. Marylebone. He had a fund of kindly humour, and his wit, though pungent at times, was always under control and seldom malicious. He was a great admirer of Dr. Johnson and a member of the Johnsonian Society.

He was secretary of the Dermatological Section at the annual meeting of the B.M.A. in 1922, and a vice-president in 1927 and again in 1929. Many reviews, annotations, and articles in this *Journal* came from his pen for more than twenty years. His handbook on *Skin Diseases in General Practice* reached a third edition in 1937. In the same year he became president of the Dermatological Section of the Royal Society of Medicine, where he had always been a frequent exhibitor of rare cases and an eloquent speaker at discussions. This office was admirably suited to his critical temperament and his natural and highly trained faculty for conducting meetings and committees. Haldin-Davis thoroughly enjoyed his two years as president, and particularly those occasions which required the kind of after-dinner speech at which he excelled. His polite cynicism, liberally adorned with appropriate quotations and anecdotes, enlivened many a dull dinner in those pre-war days.

Haldin-Davis was a born critic. Ever suspicious of new theories and sceptical of vaunted specifics, the old adage, "Make haste to apply this new remedy while it still cures," was frequently on his lips. But he was severely critical of himself too, and this attitude may account for the scarcity of dogmatic assertion and speculative theorizing in his literary work. Research was not in his line. He had neither the patience nor the aptitude for it. On the other hand he was an extremely able man of business, and his sage advice matters of finance was constantly in demand and was fre offered to many relatives and friends. His health had be to fail even before the recent war, but in spite of his disabili he continued to give his services to local hospitals, and hel to guide committees at Tunbridge Wells and East Grinste He also inaugurated a most successful War Savings group the same area. His last official medical appointment was t of medical referee to the Ministry of National Insurance. his many friends and colleagues will join in offering th sympathy to his widow and two stepchildren. His was a uni personality, and none who knew him well will ever ceas cherish his memory.

## SIR EDMUND SPRIGGS, K.C.V.O., M.D., F.R.C.P.

A colleague writes: Sir Edmund Spriggs was best known, b to his medical colleagues and to a large circle of patients, his association with, and development of, the Clinic now Ruthin Castle. Here he had the opportunity for the intens and detailed study, and also the controlled treatment, of m types of disease and particularly the metabolic and digest ailments for which his earlier work in London had prepa him. Success in this field was recognized by his election president of the Gastro-Enterological Society in 1947, of wh society he was also a foundation member. Spriggs was ab all a clinician. He was quick to receive new ideas, provi he thought that they were founded on sound physiologi principles. Thus insulin was prepared at the clinic and u under his supervision in early 1923, but he always maintain that diet must still play an important part in the treatment diabetes mellitus. The new was tried out against the old, a so the introduction of the electrocardiograph did not lead the abandonment of the well-established "stair test." always took the broad view and treated the individual as w as the disease. This attitude of mind was combined with meticulous attention to detail, especially where diet, rest, a exercise were concerned. The best type of book to be r by a bad sleeper before trying to settle at night was not o trivial for discussion and advice. His own long illness in ear years had given him an insight into the mentality of the " patient." The same attention to detail was shown in the w articles for lectures or publication were prepared. The descr tion which only occupied a few lines of a typical case of gas carcinoma in one such paper was the condensed analysis over fifty cases personally observed. For another article mo than 500 follow-up letters were written to ensure accuracy i his report on the final results. When the facts were ascertain the real work began, and the alterations and emendations i the manuscript only ended, much to the relief of his secretari staff, at the last possible moment before delivery or publicatio

While accepting that art is long, he often overlooked the fa that time is fleeting, especially if engaged on a task in whic he was interested; this led at times to minor embarrassment. His own description of a perfect holiday was one on whic no watch was carried and bodily needs were satisfied wh hunger, thirst, or tiredness dictated. On such occasions he w an interesting and entertaining companion. He read rapid and widely and had a retentive memory; this often led to t solving of a difficult problem by reference to an article read, a case seen, years before. Cautious in reaching a conclusi he was a formidable opponent if his views were attacked, always ready to abandon a position when convinced it w untenable. He was "ever a candidate for truth" and eager find out where it was hid. This urge to get to the root of matter was noticeable in his work as a magistrate and v chairman of his bench. Calm, courteous, but persistent, probed the case under consideration, and, as a court offic said, "I will always be grateful to Sir Edmund, for he tau me patience." His quiet friendliness invited personal co dences, and he received many and, as one who had seen trou himself, "his ready help was ever nigh." It is easier to w of the physician than of the man without being suspected exaggeration. Tolerant, wise and far-seeing in counsel, kin and generous in word and deed, with a high sense of duty a ready to further any good cause, as evidenced by the ma societies in which he held office, he met the blows of life w serene courage and without any of the bitterness that mi

have soured a lesser man. That he was known to his staff as "the Chief" is sufficient indication of the esteem in which they held him: it takes a big man to be a hero to his valet. "He'll be sair missed" by all who knew him, and much sympathy will be felt for his two doctor sons in their bereavement.

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Dr. JOHN WATT, who died on Jan. 2 at the age of 68, was a native of Glasgow. He took the L.D.S. there in 1904 and the Scottish triple qualification in 1913. He served in the first world war as a captain in the R.A.M.C. He then went to Skye, first to Broadford and then to Portree. After five years' strenuous service Dr. Watt decided to return to the mainland, and he took up practice twenty-six years ago in Muthill, Perthshire. Unobtrusive in nature and sparing in speech, he was skilful in diagnosis and endeared himself to the people by his kindly sympathy. Dr. Watt took his share along with other local practitioners in the work of the Crieff and District Cottage Hospital as a member of the honorary medical staff. He was also interested in the District Nursing Association, and during the recent war was in charge of the medical side of the local civil defence organization. He was also a justice of the peace for Perthshire. He was a keen sportsman, and many owe their skill as fishermen to him. His wife died with tragic suddenness seven years ago.—E. A. S.

Dr. ALEXANDER GORDON INGRAM, who died on Jan. 28 at the age of 85, had been in practice in Helensburgh for nearly sixty years. He graduated M.B., C.M. at Aberdeen in 1886, and went into general practice in Helensburgh in 1889. After taking the D.P.H. in 1913 he was appointed medical officer of health for the burgh and medical superintendent of the local infectious diseases hospital and sanatorium; he was also in charge of the child-welfare and antenatal clinics. Although he had given up his large general practice, he continued active work in his other posts until a few months ago. Rather shy by nature, he was a man of wide interests, but primarily he devoted himself to the care of his patients, by whom he was held in high esteem. A native of Banffshire, he had his full share of North-Country wit and had a great fund of anecdotes. Dr. Ingram was chairman of the Dunbartonshire Division of the B.M.A. from 1933 to 1938. He took a great interest in the younger practitioners in the area, and he spared no pains to help and encourage them. His jubilee was marked by a public presentation from his patients and friends of an illuminated address and a cheque. When he reached his diamond jubilee he entertained his colleagues in the town to a dinner. Ingram was a man of keen intellect and genial kindliness, and those of us who are left feel the better for having known him.—W. G.

Dr. MAVIS VICTORIA ZANE, who died in London on Feb. 7 at the age of 52, was born in Australia and graduated at the University of Sydney. After ten years as medical officer for girls' schools under the Egyptian Ministry of Education she served in a number of English hospitals and infant and child-welfare clinics. She joined the staff of the Save the Children Fund in January, 1948, and was appointed medical superintendent of the Fund's hospital at Schlutup, near Lubeck. This was a 100-bed hospital for the children of displaced persons from camps in the neighbourhood. The hospital, on the shores of the Baltic, was formerly the administrative block of a secret war factory concealed in the neighbouring woods, and the building was admirably adapted to its new purpose. Changed conditions in Germany brought about the transfer of the hospital to the German authorities towards the end of last year. Dr. Zane was ill when she returned from Germany last autumn, and did not recover.

# The Services

The Prince Regent of Belgium has bestowed the decoration of Chevalier of the Order of the Crown upon Temporary Surgeon Lieutenant-Commander G. F. Carey, R.N.V.S.R., for distinguished services rendered to Belgium during the war.

The King of Norway has bestowed the decoration of Norwegian War Medal upon Surgeon Lieutenant-Commander J. M. Ridyard, R.N.V.R., for distinguished services with the Royal Norwegian Navy during the war.

The Efficiency Decoration has been conferred upon Lieutenant-Colonel G. E. O'Riordan and Major E. Fowler, R.A.M.C., T.A.

# Medical Notes in Parliament

## COST OF HEALTH SERVICE

### Supplementary Estimates

It appears that the cost of the National Health Service for its first nine months will be £58,455,000 more than was originally estimated, an increase of over 39%. This is one of the main items given in the Supplementary Civil Estimates for £221,471,574 issued by the Stationery Office on Feb. 9. For England and Wales the extra sum required is £52,800,000 and for Scotland £5,655,000.

The ophthalmic services, which were expected to cost £2,330,000, are now estimated at £14,970,000. The cost of dental services will be £21,800,000 instead of £8,150,000. Drugs, medicines, and appliances will cost £17,715,000, as against the first estimate of £12,700,000.

Payments to medical practitioners at a cost of £29,800,000 show an increase of £2,300,000. The administration of the Service will cost £1,606,000, as against £890,000.

The increase in the cost of hospitals and specialist services will be £24,446,000. The liabilities of the hospitals which were transferred to the Government on the appointed day exceeded the first calculation by £17,409,000.

These supplementary estimates are to be debated on Feb. 17, and it is expected that the debate will turn mainly on the cost of the National Health Service. It had been estimated that the Service would cost in the nine months from July 5, 1948, to the end of the financial year about £150,000,000. The supplementary estimates now before the House show that the cost for the nine months will actually be £208,000,000. If expenditure continues at this rate the cost in a full year would be £277,000,000.

### Too Many Patients

Mr. BEVAN on Feb. 9 informed Mr. MARTIN LINDSAY that approximately 5,000 patients had been instructed by the Birmingham National Health Executive Council to change their registered medical practitioners. Later on the same day Mr. Lindsay opened a debate on this subject.

He said that over 3,000 people in Solihull had been instructed by the Birmingham Executive Council to leave the doctors of their choice, whose patients they had been in many cases for a number of years. The same thing had happened all over Birmingham. On the appointed day last year a number of doctors found themselves taking over many more patients than they could hope to handle. One doctor in his constituency who had a reputation as a painstaking physician found that over 3,000 patients had registered with him beyond the figure of 4,000 laid down as a maximum. The local executive council in such cases had no choice but to ask some registered patients to leave their doctor and find another. Mr. Lindsay did not question that, but questioned the method of selection of the patients who were to be removed. The fair method was to remove recent additions to the doctor's list and those people who had registered for the first time with him at the appointed date.

Another Birmingham doctor had been told that he had 500 patients in excess of 4,000 and must get rid of them by March 4 unless he obtained an assistant. The doctor had taken every possible step to find an assistant but could not do so because he could not offer accommodation to a married assistant and his family. Mr. Lindsay noted that before July 5 this doctor had the same number of patients as he had now, and his practice worked smoothly. Mr. Lindsay suggested that the figure of 4,000 should not be a statutory maximum but a guide to the approximate number of patients which a doctor could treat single-handed. If the patients considered they were not getting satisfactory service they could leave the doctor of their choice and go to someone else. The doctor had every incentive to keep up his list by looking after patients properly. Some doctors were quicker than others, and some had practices which were topographically more compact. He suggested that the maximum number should be left to the doctor concerned, the figure of 4,000 being merely a guide. He asked the Minister to instruct executive councils that where a doctor's list was much too large the recent additions to it should be removed and not patients who had long been attended by that doctor.

Sir PETER BENNETT said that from his constituency on the other side of Birmingham he had received similar complaints.

Replying to the debate, Mr. BLENKINSOP said it was far from the intention of the Ministry of Health or of the executive councils that there should be arbitrary decisions. When the medical profession had agreed to a general limitation of individual lists to 4,000, it was understood that at the start there

should be latitude to avoid splitting families. After discussion with the profession a circular was sent by the Ministry to executive councils last November suggesting that the lists should be examined because there were wide discrepancies. The general view of the medical profession as well as of the Ministry was that it would be impossible to get the type of service desired if these grossly overloaded lists were allowed. Before the Birmingham Executive Council was able to consider the matter the doctor to whom Mr. Lindsay had referred wrote to that council saying he found his list, which was more than 4,000 above the agreed figure, was too much for him. He asked the executive council to help in trying to reduce the list. The council was obliged to consider the appeal made by the doctor. The doctor himself was asked for his views. He felt that if he could limit his area of operation to a district outside Birmingham where he had a large practice and where there were few other doctors whom patients could choose he would be doing the right thing. He suggested those he wished to be removed from his list, and the Executive Council notified the names after they had been approved by the doctor concerned. Mr. Blenkinsop said that the Ministry could not accept the principle that those who came on the list last should be removed first. The action of Birmingham Executive Council had enabled the doctor to keep his practice over the 4,000 limit in an area with few alternative doctors and to release patients for whom there were a number of alternative doctors. The executive council had notified the surplus 3,000 patients, appending a note of the other doctors in the area whose lists were below the maximum figure. Mr. Blenkinsop felt that in this case the Ministry had looked at the problem and tried to find a solution fair both to the patients and the doctor. It was true that it was difficult to get accommodation for a married assistant, but it might be possible to get an assistant in the second practice to which Mr. Lindsay had referred. Many members of the medical profession felt that 4,000 was too high a figure, and it would be impossible to leave one doctor with over 8,000 on his list while other experienced doctors had much smaller lists. For the benefit of the patients the Ministry must in the friendliest way try to get some redistribution. He assured the House that the Ministry and the executive councils did not desire to take arbitrary action or to break up families or to take individuals off the list because it was a few over the maximum. There was no need to give fresh instructions to executive councils which had used reasonable discretion in the matter and had examined individual cases. The Ministry could examine individual cases of special hardship. He was anxious that the country should understand that there was no desire for arbitrary action and that the Ministry was anxious to secure the best personal service under the National Health Scheme.

### No Household Remedies

Mr. KEELING asked on Feb. 10 whether Mr. Bevan knew that some National Health Service doctors declined to write prescriptions for laxatives, first-aid dressings, antiseptics, and other household remedies which before the Service came into existence were not normally obtained on a medical prescription.

Mr. BEVAN replied that it was the duty of a doctor under the National Health Service to prescribe any drug or prescribed appliance which he considered necessary for the treatment of a patient or for the prevention of disease. It was no part of his responsibility to prescribe drugs and household remedies for healthy persons for purposes of self-medication.

*Unstaffed Beds.*—Replying to Mr. HASTINGS on Feb. 10, Mr. BEVAN stated that the number of unstaffed hospital beds on Sept. 30, 1948, was 57,500, including 4,800 in sanatoria. He added that there were large numbers of nurses not actively employed, many of whom would be willing to serve in an emergency. Their names were on an emergency reserve list kept by the Department.

*Tropical Diseases Centre.*—Mr. BEVAN informed Mr. IVOR THOMAS on Feb. 10 that it was proposed to develop a tropical diseases centre as a unit of the London University College Hospital group. He and the Colonial Secretary were anxious to ensure that this development should be worthy of the object in view, and should take place as rapidly as building and other difficulties permitted.

*Medical Superintendents.*—On Feb. 10 Mr. HARDY asked why medical superintendents were not allowed to attend hospital management committees in the Manchester regional area. Mr. BEVAN replied that this was a matter for the committee concerned. He had drawn attention to the desirability of making this arrangement.

*Lifeboats.*—Where a lifeboat has to be used to convey a patient to hospital, the expense will be met by the regional hospital board. Where a lifeboat has to be called out to convey a doctor to a patient, the liability will fall on the local executive council.

# Universities and Colleges

### UNIVERSITY OF LONDON

George Lindor Brown, M.Sc., M.B., Ch.B., F.R.S., has been appointed to the Jodrell Chair of Physiology tenable at University College, from Oct. 1.

The title of Professor of Neuropathology in the University has been conferred on Alfred Meyer, M.D., in respect of the post held by him at the Institute of Psychiatry.

A name was omitted from the list of recognized teachers of the University printed in the *Journal* of Jan. 22 (p. 159). Mr. C. H. Gray has been recognized as teacher of surgery at the Royal Free Hospital School of Medicine and Dr. J. D. S. Flew as teacher of obstetrics and gynaecology at University College Hospital Medical School.

## EPIDEMIOLOGICAL NOTES

### Influenza

There were 64 deaths from influenza in the great towns of England and Wales in the week ended Feb. 5, as against 37 in the preceding week. This is not a high figure in comparison with the corresponding one for any previous year other than 1948. There has been an increase in the number and size of outbreaks reported from residential schools, Service establishments, and so on, but in all these outbreaks the disease appears to have been relatively mild and short-lived. Outbreaks are widely scattered.

In France the epidemic is on the wane, but in some regions a slightly higher proportion of serious cases is being reported than in the earlier stages of the epidemic. A number of comparisons between different strains have now been made and show that the virus isolated from cases in the United Kingdom in the latter half of January is identical with strains currently obtained from Continental Europe.

### Discussion of Table

In *England and Wales* there were decreases in the notifications of scarlet fever 120, acute pneumonia 115, whooping-cough 85, and dysentery 44, and increases in the incidence of measles 1,402, cerebrospinal fever 21, and diphtheria 10.

The largest change in the local incidence of scarlet fever was a decrease of 37 in Lancashire. Notifications of whooping-cough increased in Yorkshire West Riding 57 and Lancashire 56 and decreased in Warwickshire 42.

The incidence of diphtheria increased in Lancashire 15, due to the experience of the county boroughs, and in Glamorganshire 7.

The largest increases in the notifications of measles were Staffordshire 215, Middlesex 190, London 130, Southampton 120, and Yorkshire North Riding 120; the only large decrease was 95 in Lancashire.

Small outbreaks of dysentery were notified during the week from Cornwall, Bodmin M.B. 7, and Dorset 6 (Beaminster R.D. 3 and Bridport R.D. 3). Other large centres of infection were Lancashire 15, London 6, and Worcestershire 6. Of the 20 cases of poliomyelitis 11 were notified in London and the south-eastern counties; the largest returns were London 4, Southampton 3, Kent 2, and Somerset 2.

In *Scotland* the only rise in the notifications of infectious diseases was 45 for measles; there were falls in the incidence of scarlet fever 16, diphtheria 14, and whooping-cough 11. Notifications of dysentery increased in Edinburgh from 4 to 9 and decreased in Glasgow from 21 to 7.

In *Eire* increases were recorded in the notifications of measles 77, scarlet fever 22, and whooping-cough 14. The largest outbreak of measles during the week was in Donegal, Stranorlar R.D. 17. The increased incidence of whooping-cough was contributed by Dublin C.B., where the notifications rose from 27 to 53.

In *Northern Ireland* a decrease occurred in the notifications of measles 24 and scarlet fever 25. In contrast to the trend for the whole country an increase in the notifications of measles was recorded in the counties of Down 14 and Tyrone 10.

### Week Ending February 7

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,372, whooping-cough 3,168, diphtheria 116, measles 13,800, acute pneumonia 1,016, cerebrospinal fever 32, acute poliomyelitis 9, dysentery 75, paratyphoid 4, and typhoid 6.

No. 4

## INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

*Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for:* (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

| Disease | 1949 | | | | | 1948 (Corresponding Week) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (a) | (b) | (c) | (d) | (e) |
| Cerebrospinal fever | 45 | 5 | 17 | 8 | — | 48 | 6 | 27 | 2 | 1 |
| Deaths | | 1 | — | | | | — | — | | |
| Diphtheria | 141 | 10 | 33 | 9 | 5 | 200 | 26 | 56 | 11 | 2 |
| Deaths | 2 | — | — | — | — | 4 | — | — | — | — |
| Dysentery | 60 | 6 | 27 | 2 | 5 | 208 | 15 | 29 | 1 | — |
| Deaths | | | | — | — | | | | — | — |
| Encephalitis lethargica, acute | — | — | — | 1 | — | 1 | — | — | — | — |
| Deaths | | 1 | | | | | 1 | | | |
| Erysipelas | | | 43 | 11 | 8 | | | 39 | 11 | 3 |
| Deaths | | — | | | | | 1 | | | |
| Infective enteritis or diarrhoea under 2 years | | | | 47 | | | | | 21 | |
| Deaths | 34 | 1 | 3 | 4 | 3 | 64 | 8 | 6 | 2 | 1 |
| Measles* | 11,656 | 487 | 108 | 118 | 139 | 4,233 | 340 | 885 | 88 | 13 |
| Deaths† | | | — | — | — | | | 3 | — | — |
| Ophthalmia neonatorum | 56 | 6 | 14 | — | — | 69 | 3 | 7 | — | 1 |
| Deaths | | | | | | | | | | |
| Paratyphoid fever | 2 | — | 3 (B) | — | — | 4 | — | — | — | — |
| Deaths | — | — | — | — | — | — | — | — | — | — |
| Pneumonia, influenzal | 935 | 52 | 31 | 10 | 3 | 850 | 56 | 9 | 6 | 8 |
| Deaths (from influenza)‡ | 37 | 6 | 17 | 1 | — | 24 | 3 | 2 | — | 1 |
| Pneumonia, primary | | | 463 | 37 | | | | 260 | 32 | |
| Deaths | 276 | 52 | | 13 | 10 | 316 | 59 | | 11 | 8 |
| Polio-encephalitis, acute | 1 | — | | | | 4 | — | | | |
| Deaths | | | | | | | | | | |
| Poliomyelitis, acute | 20 | 4 | 1 | 3 | — | 49 | 6 | 3 | 2 | — |
| Deaths§ | 1 | 1 | | | | 3 | — | | | |
| Puerperal fever | | — | 6 | | | | — | 4 | | — |
| Deaths | | | | | | | | | | |
| Puerperal pyrexia‖ | 89 | 9 | 5 | — | 1 | 106 | 7 | 12 | 1 | 1 |
| Deaths | | — | | | | | — | | | |
| Relapsing fever | — | — | | | — | — | — | | | — |
| Deaths | | | | | | | | | | |
| Scarlet fever | 1,191 | 67 | 272 | 114 | 35 | 1,926 | 105 | 355 | 36 | 48 |
| Deaths† | | | — | — | — | | | — | — | — |
| Smallpox | — | — | — | — | — | — | — | — | — | — |
| Deaths | | | | — | — | | | | — | — |
| Typhoid fever | 3 | — | 1 | 2 | — | 2 | — | — | 8 | 2 |
| Deaths | — | — | — | — | — | — | — | — | — | — |
| Typhus fever | — | — | — | — | — | — | — | — | — | — |
| Deaths | | | | — | — | | | | — | — |
| Whooping-cough* | 2,857 | 168 | 237 | 80 | 64 | 2,725 | 191 | 32 | 65 | 10 |
| Deaths | 7 | 1 | 2 | 1 | — | 10 | 1 | — | — | — |
| Deaths (0–1 year) | 325 | 28 | 45 | 21 | 10 | 407 | 66 | 53 | 21 | 14 |
| Infant mortality rate (per 1,000 live births) | | | | | | | | | | |
| Deaths (excluding still-births) | 5,526 | 891 | 852 | 207 | 142 | 5,359 | 871 | 709 | 233 | 150 |
| Annual death rate (per 1,000 persons living) | | | 17·1 | 12·8 | | | | 14·3 | 14·6 | |
| Live births | 7,725 | 1197 | 923 | 368 | 258 | 8,566 | 1396 | 958 | 414 | 268 |
| Annual rate per 1,000 persons living | | | 18·5 | 22·8 | | | | 19·3 | 25·9 | |
| Stillbirths | 168 | 16 | 33 | | | 216 | 21 | 43 | | |
| Rate per 1,000 total births (including stillborn) | | | 35 | | | | | 43 | | |

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

# Medical News

### Surgeon to the King

Professor James R. Learmonth has been appointed Surgeon to his Majesty the King. Professor Learmonth is Regius Professor of Clinical Surgery in the University of Edinburgh, and is already Surgeon to the King's Household in Scotland.

### Rheumatism Congress in New York

The British Association of Physical Medicine (45, Lincoln's Inn Fields, London, W.C.2) announces that a rheumatism congress will be held in New York in June, 1949. Members wishing to have further information about this congress should communicate with Dr. O. Savage, Deputy Honorary Medical Secretary, Empire Rheumatism Council, Tavistock House North, Tavistock Square, London, W.C.1.

### Old People's Welfare

The Third National Conference on "The Care of Old People" was held in London on Nov. 26–27, 1948. The proceedings of this conference have now been published in full as an attractive booklet which can be obtained, price 2s., from the National Council of Social Service, 26, Bedford Square, London, W.C.1.

### Mosquito Control

There has just been published a new edition of a *Memorandum on Measures for the Control of Mosquito Nuisances in Great Britain*, which appeared originally in 1940. This has been extensively revised, particularly in regard to the use of the more modern insecticides such as D.D.T. and "gammexane." The *Memorandum* is published by the Ministry of Health (H.M.S.O., price 9d.).

### Hunterian Society Dinner

The annual dinner of the Hunterian Society, held at Grosvenor House on Feb. 10, was greatly enjoyed by a distinguished company of members and guests. Sir Walter Monckton, K.C., who proposed the toast of the Society, said that though John Hunter was the father of scientific surgery he must have been the worst witness ever to have appeared in a court of law. From his experience as chairman of St. George's Sir Walter felt justified in saying that life at the hospital was quieter than in Hunter's time; to-day one was unlikely to see any of the surgeons driving from Earls Court to Hyde Park Corner with a couple of buffaloes in the car. In reply the president of the Society, Dr. Mather Cordiner, referred to the successful meetings of the previous year and expressed the hope that medicine would continue to attract adventurous spirits. The health of the Lord Mayor and the Corporation of the City of London was proposed by Dr. Franklin Bicknell, and Sir George Aylwen in reply said that he had not realized until a recent visit to Australasia what the leadership of this country meant to medicine and surgery in the Dominions. Mr. Dickson Wright proposed the health of the guests in a witty speech, in which he referred to the present as a time of "weeping, wailing, and nationalization of teeth." Sir Henry Dale in reply said that the Hunterian and kindred societies were in a central position to advance medical knowledge by observation, discussion, and communication, but it would be necessary to cling firmly to independence. Sir Ronald Burrows, K.C., who also replied for the guests, emphasized that both doctors and lawyers must be completely free to follow the course which is to the best advantage of their clients. During the course of the evening the president presented the gold medal of the Society to Dr. J. Lieber for the best essay on the treatment of obesity submitted by any general practitioner in the Empire.

### Rehabilitation and Resettlement

The second report of the standing committee on the Rehabilitation and Resettlement of Disabled Persons has just been published. The report reviews the developments of the last two years in the field of rehabilitation and suggests that when the regional hospital boards have had time to review these services in England and Wales accommodation and equipment will be found to be satisfactory in most parts of the country. A brief description is given of the special centres for cardiac cases and of the experimental industrial neurosis unit at Sutton Emergency Hospital. There is also a short account of the special measures taken for the rehabilitation and resettlement of coal-miners. The report is published by the Ministry of Labour and National Service (H.M.S.O., price 9d.).

### French Award

The French Government has conferred the Médaille de la Reconnaissance Française on Dr. L. G. Blair.

### Honorary F.R.C.O.G.

Sir Henry Dale, O.M., F.R.S., and Professor J. Heyman, of Stockholm, have been elected to the Honorary Fellowship of the Royal College of Obstetricians and Gynaecologists.

## COMING EVENTS

### Film of Lebanon Hospital

A colour film of the Lebanon Hospital for Mental Diseases will be shown for the first time in England at 8 p.m. on March 1 at the Royal Society of Tropical Medicine, Manson House, 26, Portland Place, London, W.1, under the chairmanship of Lord Moran, P.R.C.P. Other films will follow. The film will be shown again on March 2 at 7 p.m. at the same address under the chairmanship of Dr. J. C. Sawle Thomas. A collection for funds will be taken on both occasions. Applicants for tickets should write to the Lebanon Hospital Office, Drayton House, Gordon Street, London, W.C.1, enclosing a stamped addressed envelope and stating for which night tickets are wanted.

### Lectures on Tuberculosis

A course of lectures on current problems concerning the tubercle bacillus will be held in Lausanne under Professor Hauduroy, director of the Lausanne Institute of Hygiene and Bacteriology, on April 21–23. Subjects to be discussed include the following: "Human and Bovine Types of Tubercle Bacilli," by Professor Jensen; "Murine Type of Tubercle Bacillus," by Dr. A. Q. Wells, of the Sir William Dunn School of Pathology, Oxford; "Paratubercle Bacilli," by Dr. Penso, Institute of Health, Rome; "Acid-fastness of Tubercle and Paratubercle Bacilli," by Professor Hauduroy; "Chemistry of the Tubercle Bacillus," by Dr. Chain, Institute of Health, Rome; "Antibiotics Active Against the Tubercle Bacillus," by Sir Howard Florey; "Chemiotherapic Agents Active against the Tubercle Bacillus," by Dr. Tréfouel, Director of the Pasteur Institute, Paris. The lectures will be in either French or English and a summary in both languages will be distributed beforehand. Particulars may be obtained from Professor Hauduroy, 19, Avenue César Roux, Lausanne, Switzerland.

### German Congress of Medicine

The 55th German Congress of Internal Medicine will be held on April 25–28 at Wiesbaden. Subjects for discussion are: (1) Psychosomatic medicine; (2) protein metabolism and protein therapy; (3) chemotherapy of cancer, tuberculosis, and endocarditis; (4) present-day circulatory problems. Professor Dr. Curt Oehme, of Medizinische Univ.-Poliklinik, Heidelberg, would like to hear as soon as possible from those who wish to attend or to read papers, so that permits may be obtained for their entry into Germany.

## SOCIETIES AND LECTURES

### Monday

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Feb. 21, 9 p.m. Lettsomian Lecture by Dr. Horace Evans.

### Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 22, 5 p.m. "*Histopathology of the Skin*," by Dr. I. Muende.

INSTITUTE OF SOCIOLOGY.—At Royal Institute of British Architects, Portland Place, London, W., Feb. 22, 5.30 p.m. "*The Family as a Basis of Society*," by Dr. G. Scott-Williamson.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 22, 11 a.m. "*Urethritis due to Systemic, Metabolic, and Deficiency Diseases*," by Dr. A. H. Harkness.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 22, 5.15 p.m. "*Baroceptor Activity of the Carotid Sinus and Aortic Arch*," by Dr. A. Schweitzer.

### Wednesday

HARVEIAN SOCIETY OF LONDON.—At 26, Portland Place, London, W., Feb. 23, 8.15 p.m. "*Industrial Medicine*," by Dr. A. J. Amor.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 23, 11 a.m. "*Urethritis due to Local Diseases of Penis*," by Dr. A. H. Harkness.

LONDON UNIVERSITY.—At Institute of Psychiatry, Maudsley Hospital, Denmark Hill, London, S.E., Feb. 23, 2.45 p.m. "*The Organization of the Cerebral Cortex*," by Professor W. E. Le Gros Clark.

### Thursday

DEWSBURY: STAINCLIFFE GENERAL HOSPITAL.—Feb. 24, 9 p.m. "*Intracranial Irritation in the Newborn: Some Observations on the Short and Long Term Prognosis*," by Professor W. S. Craig.

EDINBURGH ROYAL INFIRMARY.—Feb. 24, 5 p.m. "*Clubbing of the Fingers*." Honyman Gillespie Lecture by Dr. A. Whitley Branwood.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 24, 11 a.m. "*Urethritis ab Ingestis*," by Dr. A. H. Harkness.

LONDON UNIVERSITY.—At Large Lecture Theatre, St. George's Hospital Medical School, Hyde Park Corner, London, S.W., Feb. 24, 4.30 p.m. Lecture-demonstration: "*Neurology*."

LONDON UNIVERSITY.—At Westminster Medical School, Horseferry Road, London, S.W., Feb. 24, 5 p.m. "*Malaria as a World Problem*." Special University Lecture by Professor B. G. Maegraith.

LONDON: UNIVERSITY COLLEGE.—At Wye College, Kent, Feb. 24. "*Recent Developments in Lactational Physiology*," by Professor H. D. Kay.

MEDICO-LEGAL SOCIETY.—At 26, Portland Place, London, W., Feb. 24, 8.15 p.m. "*Pensions Appeals Tribunals*," by Mr. Wilfred Button.

### Friday

CAMBRIDGE UNIVERSITY: PHYSIOLOGICAL LABORATORY.—Feb. 25, 5 p.m. "*An Experimental Investigation into a Condition of Widespread Nerve Degeneration*," by Sir Edward Mellanby, F.R.S.

KENT AND CANTERBURY HOSPITAL, Canterbury.—Feb. 25, 5 p.m. to 7 p.m. Clinical meeting.

LONDON CHEST HOSPITAL, Victoria Park, E., Feb. 25, 5 p.m. "*Treatment of Empyema*," by Mr. D. S. M. Barlow.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos Street, London, W.—Feb. 25, 8 p.m. "*Some Individual and Social Factors in Venereal Disease*," by Dr. Robert Sutherland.

NATIONAL COUNCIL OF NURSES OF GREAT BRITAIN AND NORTHERN IRELAND.—At B.M.A. House, Tavistock Square, London, W.C., Feb. 25, 7 p.m. Conference on the use of B.C.G. vaccination to protect persons exposed to tuberculous infection. Speaker, Miss R. Spilling, supported by Dr. F. R. G. Heaf.

ROYAL INSTITUTE OF PHILOSOPHY.—At University Hall, 14, Gordon Square, London, W.C., Feb. 25, 5.15 p.m. "*The Human Person in Contemporary Philosophy*," by the Rev. F. C. Copleston, S.J., M.A.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—Feb. 25, 8 p.m. "*Some Anatomical Observations on Congenital Heart Disease*," by Professor R. Walmsley.

ROYAL SANITARY INSTITUTE.—At Town Hall, Blackburn, Feb. 25, 10 a.m. Discussions: "*Developments in Child Health*," to be opened by Professor N. B. Capon. "*Sludge Digestion for Dried Grass Production*," to be opened by Mr. F. V. Powell, A.M.I.C.E.

SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE.—At Royal College of Physicians of Edinburgh, 9, Queen Street, Edinburgh, Feb. 25, 5.30 p.m. "*Notes on the History of Paediatrics in Scotland*," by Dr. H. P. Tait.

## APPOINTMENTS

Dr. Hallam Gray Massiah has been reappointed a Member of the Legislative Council of the Island of Barbados for a further period.

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GALSTAUN, S. G., M.R.C.S., L.R.C.P., F.F.R., Assistant Radiologist, Prince of Wales's Hospital, Plymouth.

HARMER, M. H., M.B., B.Chir., F.R.C.S., Assistant Surgeon, The Royal Cancer Hospital, Fulham Road, London, S.W.

PRITCHARD, PERCIVAL V., M.D., F.R.C.P.Ed., F.R.F.P.S., D.P.H., Chairman, Health Centres Committee, General Health Services Board for Northern Ireland.

ROYSTON, G. RIDDELL, M.D., M.R.C.P., D.C.H., Physician, Wellhouse Hospital, Barnet, Herts.

SLEIGH, JOHN, M.B., Ch.B., D.P.H., Assistant County Medical Officer, East Suffolk County Council, and Medical Officer of Health, Halesworth and Leiston Urban Districts and Blyth Rural District.

WEST, P., B.M., B.Ch., House-surgeon, Hospital for Sick Children, Great Ormond Street, London, W.C.

## BIRTHS, MARRIAGES, AND DEATHS

### BIRTHS

**Almond.**—On Feb. 8, 1949, at Little Culver, Burghclere, near Newbury, to Joy (née Forster), wife of Dr. John M. C. Almond, a daughter—Penelope Jane.

**Badenoch.**—On Feb. 7, 1949, at 20, Devonshire Place, London, W., to Jean (née Brunton), M.B., Ch.B., wife of Alec W. Badenoch, M.D., Ch.M., F.R.C.S., 110, Harley Street, London, W., a son.

**Levi.**—On Feb. 11, 1949, in Liverpool, to Dr. Pearl Levi (née Lyons), wife of Dr. H. T. Levi, a son.

**Seaver.**—On Feb. 8, 1949, at Leicester, to Sheila (née Coldrick), wife of Dr. R. G. Seaver, a son.

**Sinclair.**—On Feb. 6, 1949, at Fernwood House, Newcastle-upon-Tyne, to Ruth and John A. Sinclair, The Manor House, Houghton-le-Spring, a daughter.

### MARRIAGE

**Deane—Walker.**—On Feb. 5, 1949, at Great Yarmouth, K. R. (Tony) Hamilton Deane, M.R.C.S., L.R.C.P., to Valerie Walker (née Nightingale).

### DEATHS

**Davies.**—On Feb. 10, 1949, at South Devon and East Cornwall Hospital, Plymouth, Arthur Llewellyn Davies, M.R.C.S., L.R.C.P.

**Donaldson.**—On Jan. 29, 1949, David Gilbert Donaldson, M.B., C.M.Ed., of West End, Dunning, Perthshire, aged 88.

**Halstead.**—On Feb. 1, 1949, at Bideford, George Ezra Halstead, M.D., late of Ramsgate, aged 87.

**Harnett.**—On Feb. 9, 1949, suddenly, at Devon House, Hadley, Barnet, William George Harnett, M.D., J.P., aged 68.

**Harper.**—On Feb. 6, 1949, James Eder Harper, M.R.C.S., L.R.C.P., of Oldbury, Birmingham, aged 80.

**Haswell.**—On Feb. 3, 1949, at The Friarage, Penrith, Cumberland, John Francis Haswell, C.I.E., M.D., late Colonel, R.A.M.C., aged 84.

**Holmes.**—On Jan. 31, 1949, at St. Aubyns, Burnham-on-Sea, Somerset, Harold Whewell Hogarth Holmes, M.B., B.Ch., aged 54.

**Ingram.**—On Jan. 28, 1949, at Rothiemay, Helensburgh, Dumbartonshire, Alexander Gordon Ingram, M.B., C.M., D.P.H., aged 85.

**Isard.**—On Feb. 4, 1949, at Queen Victoria Cottage Hospital, Oswald Hanson Isard, M.B., C.M.Ed., of Kentleys, Tonbridge, aged 81.

**Jones.**—On Jan. 24, 1949, lost at sea coming home on leave from British Cameroons, Crawford Maxwell Jones, M.B., Ch.B., Colonial Service.

**Laing.**—On Jan. 24, 1949, at Johannesburg, South Africa, Gordon Dacomb Laing, M.B., Ch.B., D.P.H., D.T.M. and H., F.R.S.I.

**Low.**—On Feb. 3, 1949, in Edinburgh, Robert Cranston Low, M.D., F.R.C.P.Ed., F.R.S.Ed., of 37, Oxgangs Road, Edinburgh.

**Lyon.**—On Feb. 6, 1949, at 94, Clarkston Road, Cathcart, Glasgow, Robert Murray Lyon, M.D., F.R.F.P.S.

**Lys.**—On Feb. 6, 1949, at Bere Regis, Wareham, Dorset, George Lys, M.R.C.S., L.R.C.P., aged 81.

**Menon.**—On Sept. 7, 1948, Elayedath Achyuta Menon, F.R.C.S.Ed., of Irinjalakuda, Cochin State, India.

**McNeill.**—On Feb. 7, 1949, at Tettenhall, Wolverhampton, Ina Lochhead McNeill, M.B., Ch.B., aged 79.

# Any Questions?

*Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions. which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.*

### Infective Hepatitis

**Q.**—*In cases of infective hepatitis in children that I have seen recently there has been rapid clinical improvement without corresponding improvement in physical signs. Should one treat these cases with reference to clinical condition only, or does the presence of an enlarged liver and spleen call for additional rest in bed? Are any further investigations indicated?*

**A.**—The liver may remain enlarged for several months after a severe attack of infective hepatitis. This does not necessarily mean that post-hepatitic cirrhosis is going to develop. If, however, the liver edge becomes irregular or the spleen enlarges, the development of cirrhosis can be expected. One of the early indications in a patient convalescing from acute infective hepatitis that the liver is on the way to becoming cirrhotic is to find that, despite an adequate intake of food, the plasma albumin is low and the plasma globulin high. In the particular case mentioned it is advised that the plasma albumin and globulin be determined, and also the cephalin cholesterol and the thymol flocculation tests performed. If none of these indicates any abnormality the child can be allowed to get up and about; it is advisable that exercise be somewhat restricted for a start. The case should be watched for any untoward symptoms until the liver has returned to normal.

### Premenstrual Tension State

**Q.**—*Is there any alternative treatment for the cerebral anaemia of the premenstrual phase, with its attendant symptoms of depression, lack of concentration, and extreme fatigability, in a patient who has failed to respond to a salt-free diet with ammonium chloride therapy, and still complains of greatly reduced capacity for mental work for at least five or six days?*

**A.**—The origin of a premenstrual tension state can often be traced back to an emotional shock, domestic upset, or marital difficulty, especially in a highly strung young woman. It would therefore be helpful to know the age, marital status, menstrual, and marital history of the patient as well as her temperament. A mistaken conception of the purpose and function of menstruation should also be excluded. Although it was originally suggested that the condition might be due to a relative deficiency of progesterone, it has recently become more usual to ascribe the syndrome to a high production of oestrogen and progesterone or to an increased body sensitivity to these hormones. Consequently the administration of testosterone is now favoured, even by Freed (*J. Amer. med. Ass.*, 1945, **127**, 377), who had earlier recommended the treatment by "decongestion" already tried by the questioner. Testosterone propionate, 20 mg. injected twice weekly throughout the cycle, is advised for severe cases, while in the milder degrees methyl testosterone, 10 mg. sublingually for ten days premenstrually, may suffice. With the higher dosage manifestations of virilism should be watched for. The symptoms of the premenstrual tension state are not generally imputed to cerebral anaemia, but in this patient examination of the blood picture to exclude anaemia would be advisable.

### High-frequency Diathermy for Hypertension

**Q.**—*Has high-frequency diathermy proved of any value in cases of essential hypertension or for pain subsequent to coronary thrombosis? If so, what is the dosage, and are there any contraindications?*

**A.**—High-frequency diathermy has been used for over ten years in the treatment of hypertension with varying degrees of success. The fall is most pronounced after the first treatment, and gradually decreases till a more or less constant level is reached. The degree of fall varies with individual cases, being as a rule greatest with high pressures. According to Meyer's technique, one electrode 10 to 12 cm. in diameter is applied over the region of the heart; the other is placed over the vertebral column, either at the level of the fourth dorsal vertebra or on the left side of the neck at the level of the stellate ganglion. The wavelength is 6 to 16 metres, and sessions lasting 8 to 15 minutes are given every second day, a course of treatment comprising eight to twelve sessions. The systolic blood pressure is measured every two minutes, and any sudden fall or any rise is an indication to stop treatment for that session. Subjective sensations of precordial discomfort or nausea are contraindications to further treatment. Even when the blood pressure is not materially lowered the symptoms may be greatly relieved. This treatment is also used for angina pectoris, but has proved of little value for the sequelae of coronary thrombosis.

### Pilocarpine and Eserine

**Q.**—*Can pilocarpine and eserine sometimes produce a dilatation of the pupil in the same way as does atropine? If so, how is this brought about? Is there any literature on the subject?*

**A.**—Most substances like pilocarpine, eserine, and atropine have two actions, the one being the opposite of the other. If 1 mg. of atropine sulphate is taken by mouth, the first effect is to slow the heart rate and to make the skin moist. Then, after one hour (or less), the opposite effect is seen: the heart rate quickens and the skin becomes dry. It is therefore conceivable that pilocarpine and eserine, given in a large dose, may have the same effect as excess of acetylcholine and cause paralysis of the muscles supplied by the third nerve as atropine does, and therefore produce pupil dilatation. This is a very unlikely action, but somewhat more probable with eserine than with pilocarpine. There is no published discussion of this double effect in the eye, but Gaddum's *Pharmacology* (3rd ed., p. 185) might be consulted, and then the paper by E. Bülbring (*Brit. J. Pharmacol.*, 1946, **1**, 38), which contains several examples of this double action.

### Tinnitus

**Q.**—*A patient aged 52 has been suffering from menopausal tinnitus for 14 months. The left side only is affected, and despite the administration of barbiturates, stilboestrol, and vitamin B complex, and extraction of all the teeth, the condition continues unabated. There is no impairment of hearing. The patient is showing signs of nervous exhaustion, and I should be grateful for suggestions about further lines of treatment.*

**A.**—A trial should be made of bromides, or, if there is hypertension, of iodides. Recently Garnett Passe (*Journal*, Nov. 6, 1948, p. 812) has treated cases of Ménière's disease by sympathectomy, and has claimed relief of the tinnitus in a proportion of them. If these results are confirmed by other workers the operation might be advised in this case. It must be admitted, however, that in many cases tinnitus can only be alleviated.

### Dhobie Itch

**Q.**—*A patient has suffered from attacks of dhobie itch every few months since coming to the Tropics eighteen years ago. These cleared up after one or two applications of an ointment composed of 2% salicylic acid, 2% sulphur, and 1% ammoniated mercury in equal parts of lanoline and petroleum jelly. After a course of tablets containing vitamins and calcium pantothenate, for the last three months he has had a lowered immunity to this infection. What is the explanation of this? The infection is now controlled by daily inunction of the above ointment. Clothing is boiled. Is there any danger in the prolonged use of the ointment? If infected clothes are not boiled, how long will the fungus live in them? Has the cause of the scrotal dermatitis among prisoners of war in Japanese hands at Singapore been established yet?*

**A.**—The diagnosis should be confirmed by direct examination and culture. If positive, infection between the toes and of toe-nails should be considered. Seborrhoeic dermatitis would seem to be a possible diagnosis, and a watery solution of one of the dyes a suitable application. The taking of vitamins

and calcium would not affect a fungous infection, but a state of health demanding such measures might bear upon the diagnosis of a seborrhoeic dermatosis. There is no danger in using the ointment mentioned apart from idiosyncrasy and sensitization. Repeated boiling or formalin treatment of clothes are effective fungicidal measures. Scrotal dermatitis may be evidence of a riboflavin deficiency. The Singapore cases are referred to by Sefton (*Brit. J. Derm. Syph.*, 1947, **59**, 85–103 and 159–168).

### Frequent Micturition

**Q.**—*An unmarried female aged 26 has suffered from frequency of micturition since the age of 12. This greatly incapacitates her in her work, which entails attendance at lengthy public functions, and causes great mental strain. She can rarely hold urine for more than two hours, frequently passes it every hour, and sometimes several times in an hour, without any apparent predisposing cause. Investigation of the genito-urinary tract reveals no abnormality. The urine is acid with no abnormal constituents; no pathogenic organisms have ever been found. Treatment with alkaline mixtures has had no effect, and sedatives have proved useless. Would you advise the use of vasopressin, and, if so, in what dosage? Would there be any ill effects?*

**A.**—It is assumed that a lesion in the nervous system has also been excluded. There is no indication for the use of vasopressin unless it is established that the frequency is due to polyuria. If there is neither nocturia nor nocturnal enuresis, then the condition is probably a functional one. If not already done, cystometric examination, including estimation of the bladder capacity, should be carried out by a urologist. Treatment would depend on the results of cystometry, but bladder drill—teaching the patient to retain increasing amounts of fluid in the bladder—is well worth trying. Among the drugs, atropine as a parasympathetic depressant, or ephedrine as a sympathetic stimulant, are most likely to be beneficial.

### Vaccination for Recurrent Herpes

**Q.**—*Can recurrent herpes simplex be treated by smallpox vaccine? What is the technique, and what are the results?*

**A.**—Recurrent herpes has been treated, with variable success, by vaccinating patients with plasma from their own herpetic vesicles, with a formalinized 10% suspension of herpes-infected pads of guinea-pigs (Brain, *Brit. J. Derm. Syph.*, 1936, **48**, 21), and with smallpox vaccine. Arnold (*Proc. Clin. Honolulu*, 1944, **10**, 91) reported considerable success in the treatment of 14 patients by this last method. The technique is that normally employed in vaccination, and the procedure may be repeated at fortnightly intervals.

### "Dry Socket"

**Q.**—*What is the pathology of the dry dental socket? Can this be diagnosed before extraction, and what is the subsequent treatment?*

**A.**—"Dry socket" is in reality a misnomer, since it is used to describe a septic socket the delay in healing of which is due to infection of the supporting bone. The condition results usually from three main causes: (1) the dislodging of the clot from the socket by mechanical means, such as misguided syringing or plugging into the socket; (2) infection in the socket causing disintegration of the blood-clot; (3) occasional failure of the blood-clot to form, due to excessive local vasoconstriction caused by large amounts of local anaesthetic. It is more prevalent in the lower jaw, owing to the fact that dependent drainage does not obtain as in the upper jaw, and any tooth showing sepsis at the apex is suspect, since any such tooth with deep infection at the bottom of the socket is liable to cause breakdown of the clot. After the tooth has been extracted the socket, if septic, should be treated as for any other septic condition—heat in the form of hot mouth-washes should be applied (hypertonic saline), and local penicillin in the form of pastilles given to reduce the infection; the pain in severe cases may be controlled by very light plugging of the socket with obtundents such as oil of cloves or "dentalone."

### Hallux Valgus

**Q.**—*A man aged 55 had a cerebral haemorrhage about si years ago, with resultant hemiplegia of the left side. He ha now almost fully recovered the power and movements of th hand and leg, but has extreme hallux valgus, with the hallu at right-angles under the second and third toes. Would a operation be possible and likely to effect considerable improve ment? What anaesthetic would be best? He is in goo general health but has a chronic bronchial wheeze and cough.*

**A.**—The treatment of hallux valgus should depend on th extent of the disability, as judged from the symptoms an functional capacity, rather than on the anatomical condition of the foot alone. Thus some patients, even those with severe deformity of the toe, are not sufficiently disabled to mak operation worth while, whereas others, with relatively sligh deformity, may demand operation for relief of arthritic o pressure symptoms. In the case under discussion there would be no particular contraindication to operation; and, if the dis ability is considerable, correction should be advised. Opinion differ on the question of the most suitable operation, but mos would agree that a procedure of the Keller type, with excision of at least the proximal two-thirds of the proximal phalanx o the hallux, would lead to considerable improvement. Thio pentone induction, followed by nitrous oxide and oxygen o cyclopropane and oxygen, would be a suitable anaesthetic.

## NOTES AND COMMENTS

**"Rapid" Rat Test for Pregnancy.**—Dr. A. D. TELFORD GOVAN (Glasgow) writes: In answer to a question regarding the diagnosi of pregnancy by means of rat tests ("Any Questions?" Jan. 15 p. 121) you referred specifically to a 2-hour test. There are four tests described in which the rat is the animal used. These are the 2-, 6-, 24-, and 36-hour tests respectively, all of which have had the description "rapid" applied to them. Eberson and Silverberg reported their results on 24- and 36-hour rat tests and claimed a high degree of accuracy.[1] Similar claims were made by Reiprich,[2] Walker and Walker,[3] and Kelso.[4] Later, in 1942, Salmon and his colleagues described a 6-hour test which was accurate in practically 100% of cases.[5] Kupperman, Greenblatt, and Noback[6] claimed a similar accuracy for the 2-hour test. In the research department of the Glasgow Royal Maternity and Women's Hospital we carry out approximately 1,500 pregnancy tests per year for hospitals and practitioners. During the past year we made a comparison of the 2- and 6-hour rat tests with the Friedman and Aschheim–Zondek tests. Immature female rats were used, and in our technique we doubled the usual dose and injected 1 ml. of urine intraperitoneally into either iliac region. We have found 2-hour tests quite unreliable, due to the difficulty experienced in reading the results. On the other hand, the 6-hour test was very easy to read and found to be as accurate as the Friedman and Aschheim–Zondek tests. Not only was the congestion of the ovaries more marked than in the 2-hour test, but in the majority of cases haemorrhagic follicles appeared. In our experience the 2-hour rat test, because of the difficulty in reading results and the too great importance of the personal factor involved in interpretation, is not suitable for use in the average laboratory. We would, however, recommend the 6-hour test using the double dose indicated. It is speedy, easy to perform, easy to read, and highly accurate.

REFERENCES

1 *J. Amer. med. Ass.*, 1931, **96**, 2176.
2 *Klin. Wschr.*, 1933, **12**, 1441.
3 *J. Amer. med. Ass.*, 1938, **111**, 1460.
4 *Amer. J. clin. Path.*, 1940, **10**, 293.
5 *J. clin. Endocrinol.*, 1942, **2**, 167.
6 Ibid., 1943, **3**, 548.

**Correction.**—In the article "Enteritis Necroticans due to *Clostridium Welchii* Type F," by Professor J. Zeissler and Miss R. Rassfeld-Sternberg (Feb. 12, p. 267), the name of Lieut.-Col. R. L. Townsend should have been spelt as here, and Brig. H. T. Findlay should have been referred to in the same paragraph, not Dr. G. M. Findlay.

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